



Test Report

Product Name : I600 WiMAX MODEM

Model No. : I600

FCC ID : Q78-ZTE-I600

Applicant : ZTE Corporation

Address : ZTE Plaza, Keji Road South, Hi-tech Industrial Park,
Nanshan District, Shenzhen, P.R. China

Date of Receipt : 2008/10/26

Issued Date : 2008/11/12

Report No. : 08AS066R-RF-US-P10V02

The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standard through the calibration of the equipment and evaluated measurement uncertainty herein.

This report must not be used to claim product endorsement by CNLA, NVLAP or any agency of the Government. The test report shall not be reproduced except in full without the written approval of QuieTek Corporation.

Test Report Certification

Issued Date : 2008/11/12

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Product Name : I600 WiMAX MODEM
Applicant : ZTE Corporation
Address : ZTE Plaza, Keji Road South, Hi-tech Industrial Park,
Nanshan District, Shenzhen, P.R. China
Manufacturer : ZTE Corporation
Address : ZTE Plaza, Keji Road South, Hi-tech Industrial Park,
Nanshan District, Shenzhen, P.R. China
Model No. : I600
FCC ID : Q78-ZTE-I600
Rated Voltage : AC 120 V / 60 Hz
EUT Voltage : DC 12V
Trade Name : ZTE
Applicable Standard : FCC Part 27 Subpart C & M: 2007
Test Result : Complied
Performed Location : SuZhou EMC laboratory
No.99 Hongye Rd., Suzhou Industrial Park Loufeng
Hi-Tech Development Zone., SuZhou, China
TEL: +86-512-6251-5088 / FAX: +86-512-6251-5098
FCC Registration Number: 800392

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Laboratory Information

We , **Quietek Corporation**, are an independent EMC and safety consultancy that was established the whole facility in our laboratories. The test facility has been accredited by the following accreditation Bodies in compliance with ISO 17025, EN 45001 and Guide 25:

Taiwan R.O.C.	: BSMI, DGT, CNLA
Germany	: TÜV Rheinland
Norway	: Nemko, DNV
USA	: FCC, NVLAP
Japan	: VCCI

The related certificate for our laboratories about the test site and management system can be downloaded from Quietek Corporation's Web Site : <http://tw.quietek.com/modules/myalbum/>
 The address and introduction of Quietek Corporation's laboratories can be founded in our Web site : <http://www.quietek.com/>
 If you have any comments, Please don't hesitate to contact us. Our contact information is as below:

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 TEL : +86-512-6251-5088 / FAX : 86-512-6251-5098 E-Mail : service@quietek.com



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1. General Information

1.1. EUT Description

Product Name	I600 WiMAX MODEM
Trade Name	ZTE
Model No.	I600
FCC ID	Q78-ZTE-I600
Working Voltage	DC 12V
Frequency Range	2499 - 2687 MHz
Channel Bandwidth	5MHz, 10MHz
Type of Modulation	QPSK, 16QAM, 64QAM (DL)
Data Rate	DL: 20Mbps, UL: 7Mbps
Channel Control	Auto
Antenna Type	Inner Omni
Antenna Gain	5.0dBi (Peak)
Antenna Diversity	1xTx, 2xRx

Note:

1. This device is a Wireless Broadband Modern which includes a 2.6GHz receiving function, and 2.6GHz transmitting function.
2. These tests were done on a sample of the equipment for the purpose of demonstrating compliance with Part 27 Subpart M for OFMDA digital devices.
3. Regards to the frequency band operation; the lowest , middle and highest frequency of channel were selected to perform the test, and shown on the test report.
4. This device is a composite device in accordance with Part 15 regulations. The receiver function was measured and a test report was made, which report number is 089074R-RFUSP01V02 under Declaration of Conformity.

RF Profile:

Frequency Range (GHz)	Channel Frequency Step (kHz)	Channel Bandwidth(s)(MHz)	FFT size	Duplexing Mode
2.496 – 2.69	250	5	512	TDD
		10	1024	TDD

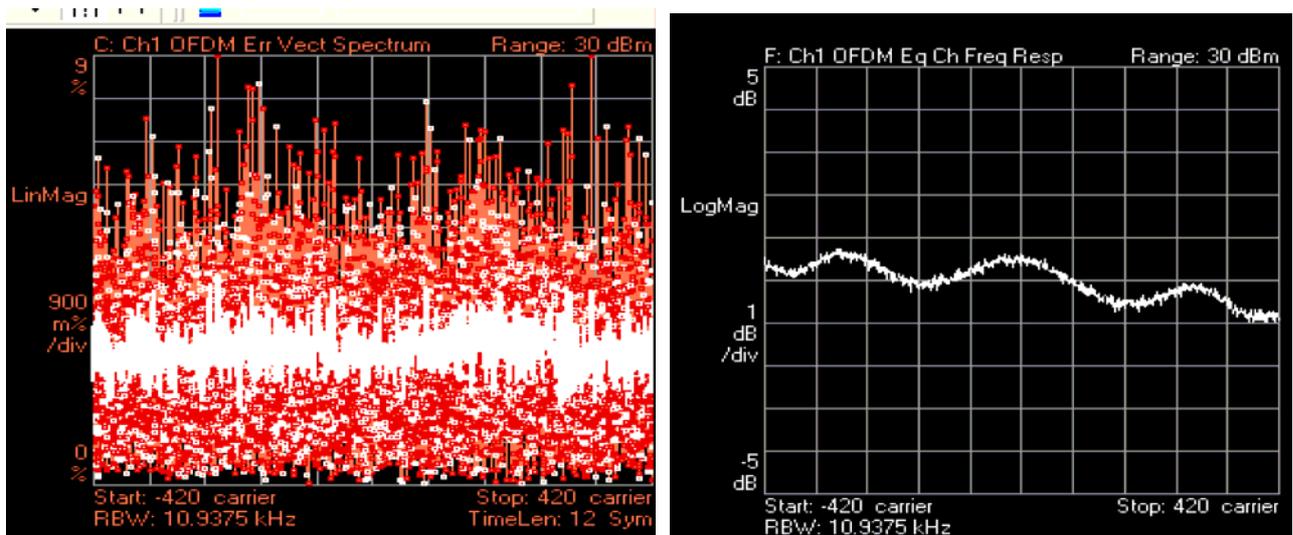
Physical Parameter:

Parameter	Uplink	Uplink
System Bandwidth	5MHz	10MHz
FFT Size	512	1024
Null Sub-Carriers	104	184
Pilot Sub-Carriers	136	280
Data Sub-Carriers	272	560
Sub-Channels	17	35
Symbol Period, Ts	102.9 microseconds	
Frame Duration	5 millisecond	
OFDM Symbols/Frame	48	
Data OFDM Symbols	44	
Modulations	QPSK 1/2 CTC , QPSK 3/4 CTC 16QAM 1/2 CTC , 16QAM 3/4 CTC	

1.2. Operational Description

The ZTE I600 device is 2.6 GHz WiMAX transceiver in a configuration using Beceem chipset which supports 1xTx and 2xRx for this device. Only one antenna is used for both transmitting and receiving signal and the other antenna is strictly used for RX diversity. Its uplink is capable of both 10 MHz and 5 MHz bandwidths. For the 10 MHz bandwidth, it has 35 sub-channels structured from 1024 subcarriers; 184 are used as spare/safeguard subcarriers, leaving 840 available for transmission. From this, 560 subcarriers for data transmission with 280 subcarriers intended for pilot use. For the 5 MHz bandwidth, it contains 17 sub-channels using 512 subcarriers; 104 subcarriers as spare/safeguard subcarriers, 272 for data transmission, and 136 for pilot. The up-link sub-frame is triggered by an Allocation Start Time contained in the information of UL-MAP. This information specifies the starting times of the Up-link and Down-link frames. In any UL sub-frame, the duty factor ranging and bandwidth information is used to ensure optimal system operation. In normal device transmission the device will transmit control signaling at the first 3 up-link symbols and then use the rest of the up-link symbols for data traffic bursts in the uplink sub-frame. Since the first 3 symbols are also used for ranging detection purposes and are shared among other device users, its transmitting power is much smaller than the data burst symbol power. During the testing modes the first 3 symbols are also kept in reduced power level and the data traffic bursts are always running at the maximum output power level. In the real usage, the data burst power will be adjusted according to the signal strength of the communication. In this way, by using the test mode arrangement we are transmitting at a worst case RF level.” [Maximum possible would be having all 18 symbols at full power.]

PUSC with 840 sub-carriers for 10 MHz Bandwidth

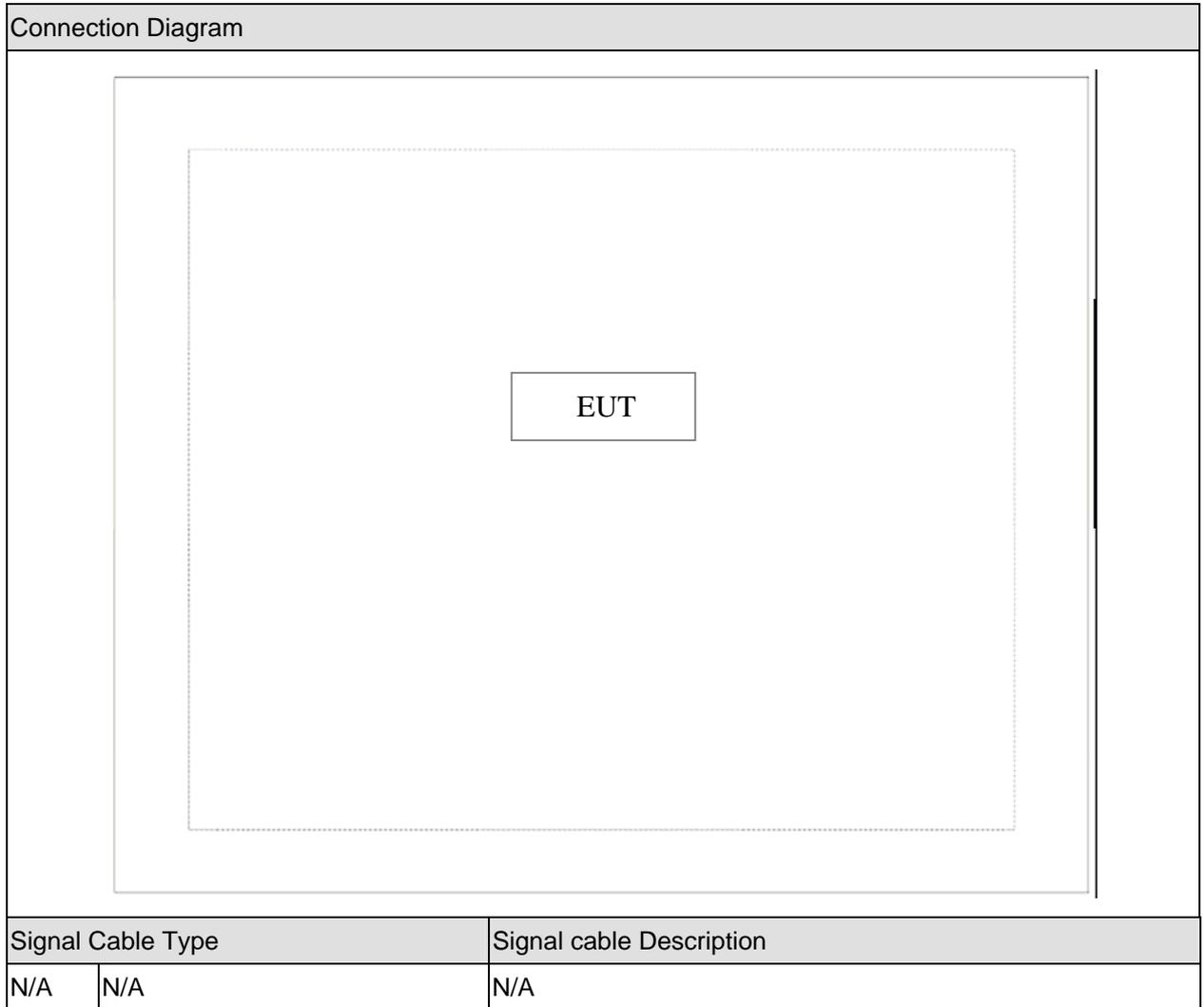


1.3. Tested System Details

The types for all equipments, plus descriptions of all cables used in the tested system (including inserted cards) are:

Product		Manufacturer	Model No.	Serial No.	Power Cord
1	Notebook	DELL	PP19L	JH097 A01	Power by adaptor

1.4. Configuration of Tested System

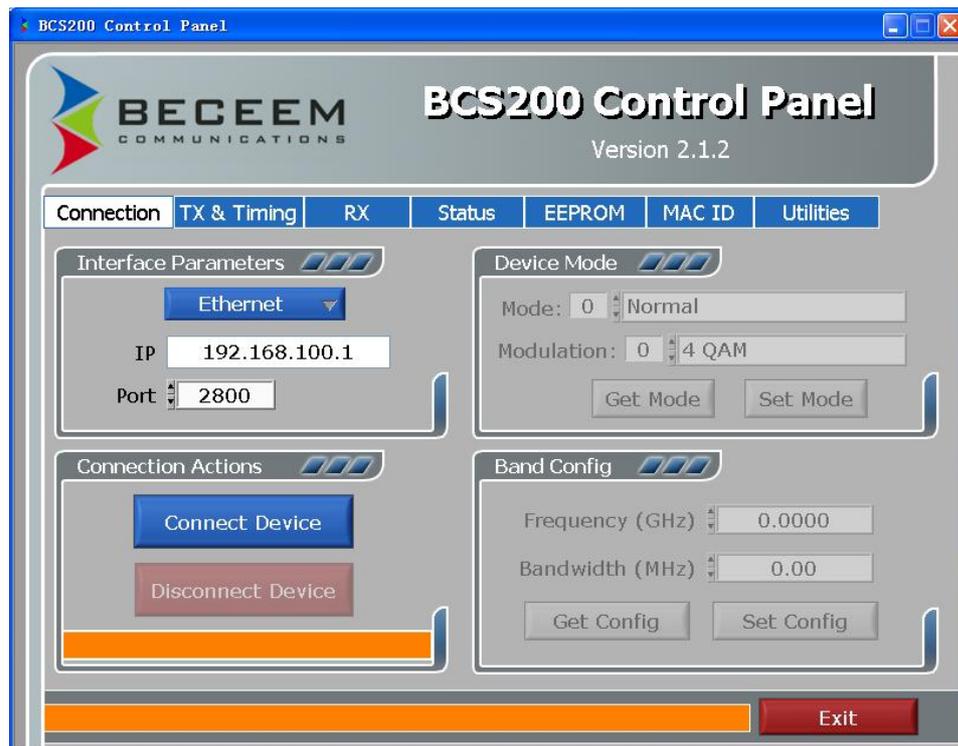


1.5. Test Mode

Test Mode
Mode 1: Transmit (5MHz Bandwidth)
Mode 2: Transmit (10MHz Bandwidth)

Note:

EUT was being controlled by BECEEM chipset driver control panel software which allows the working modes being chosen in between QPSK and 16QAM; Transmission bandwidth being chosen in between 5MHz and 10 MHz. Under the “Tx continuous OFDMA’ mode the device is working with 100% duty factor, continuously transmitting Up-link signal at a periodically stable transmission mode. All the tests were done under this manufacturer chipset driver control panel. There are four possible mode configurations under present software driver control panel as follows: 5MHz QPSK, 10MHz QPSK, 5MHz 16QAM and 10MHz 16QAM. The channel frequency can be chosen through this control software.



2. Technical Test

2.1. Summary of Test Result

- No deviations from the test standards
 Deviations from the test standards as below description:

Performed Test Item	Normative References	Test Performed	Deviation
RF Power Output	FCC Part 27.50(h)(2) and Part 2.1046	Yes	No
Occupied Bandwidth	FCC Part 27.53(l)(6) and Part 2.1049	Yes	No
Band Edge	FCC Part 27.53(l)(2)(6) and Part 2.1051	Yes	No
Spurious Emission at Antenna Terminals	FCC Part 27.53(l)(2)(6) and Part 2.1051	Yes	No
Field Strength of Spurious Radiation	FCC Part 27.53(l)(2)(6) and Part 2.1053	Yes	No
Frequency Stability	FCC Part 27.54 and Part 2.1055	Yes	No

2.2. Test Environment

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	21
Humidity (%RH)	25-75	50
Barometric pressure (mbar)	860-1060	950-1000

3. RF Power Output

3.1. Test Equipment

RF Power Output (Conducted Measurement) / AC-4

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2008/06/11
Coaxial Cable	Huber+Suhner	AC4-RF	09	2007/11/25
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH007	2008/03/09

RF Power Output (Radiated Measurement) / AC-2

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	E4408B	MY45102679	2008/06/28
PSG Analog S.G.	Agilent	E8257D	MY44321116	2008/06/11
Preamplifier	Quietek	AP-180C	CHM-0602012	2007/11/25
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	496	2008/06/28
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	499	2008/06/28
Coaxial Cable	Huber+Suhner	AC2-C	04	2007/11/25
Coaxial Cable	Huber+Suhner	AC4-T	08	2007/11/25
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH002	2008/03/31

RF Power Output (Radiated Measurement) / AC-3

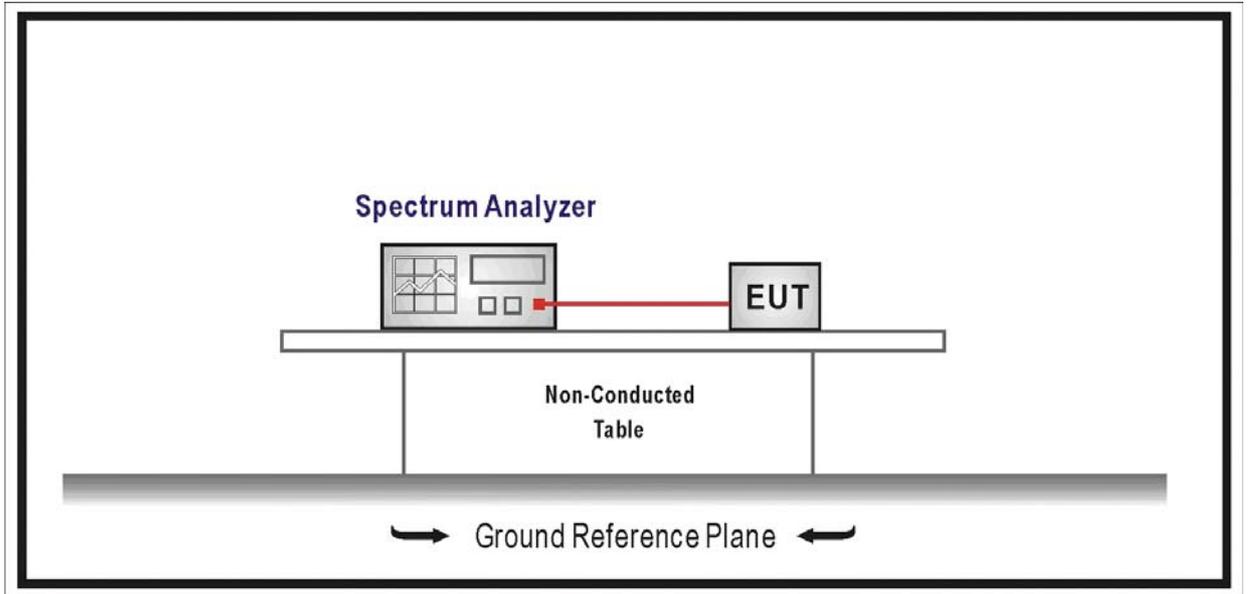
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	N9010A	MY48030494	2008/04/24
PSG Analog S.G.	Agilent	E8257D	MY44321116	2008/06/11
Preamplifier	Quietek	AP-180C	CHM-0602012	2007/11/25
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	496	2008/06/28
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	499	2008/06/28
Coaxial Cable	Huber+Suhner	AC3-C	05	2007/11/25
Coaxial Cable	Huber+Suhner	AC4-T	08	2007/11/25
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH003	2008/03/31

Note 1: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

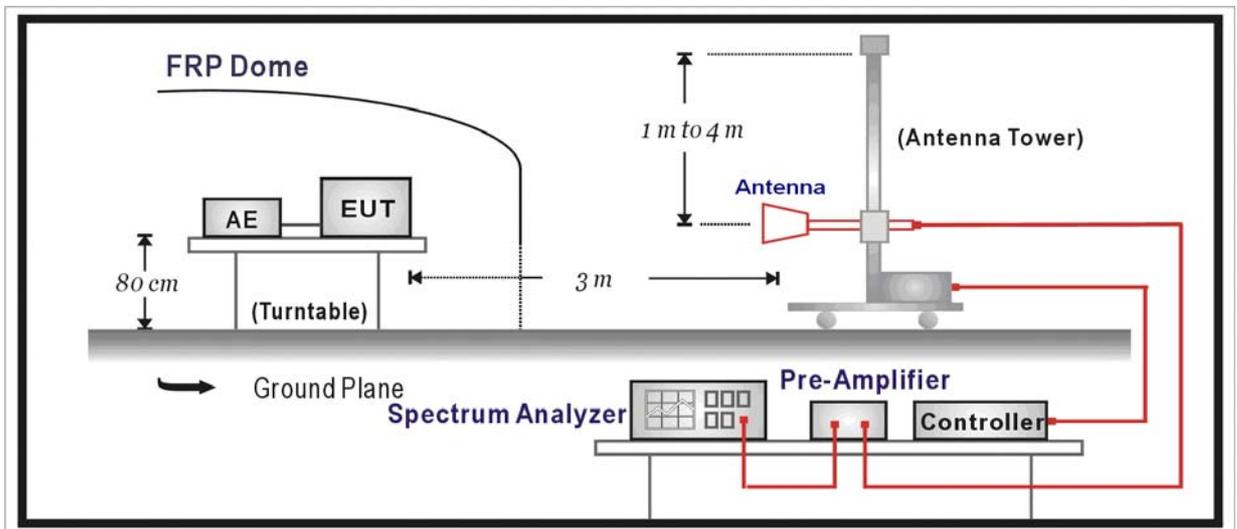
Note 2: The test instruments marked with "X" are used to measure the final test results.

3.2. Test Setup

For Conducted Measurement



For Radiated Measurement



3.3. Limit

Mobile stations are limited to 2.0 watts EIRP

All user stations are limited to 2.0 watts transmitter output power

3.4. Test Procedure

RF output power would be determined by the channel power measurement function of the spectrum analyzer.

Spectrum analyzer settings as following:

- Set span to encompass the entire emission bandwidth (EBW) of the signal.
- Set RBW = 100 kHz, VBW = 1 MHz, Detector mode = Peak.
- Computer power by integrating the spectrum across the 26dB EBW of the signal.

3.5. Uncertainty

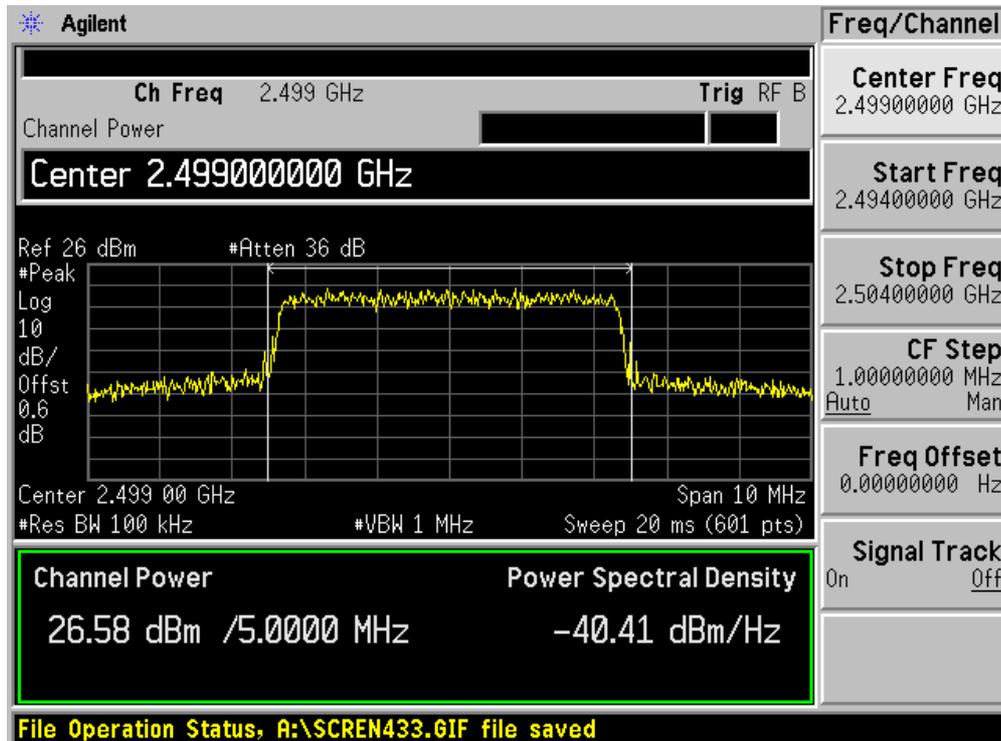
The measurement uncertainty is defined as ± 1.27 dB

3.6. Test Result

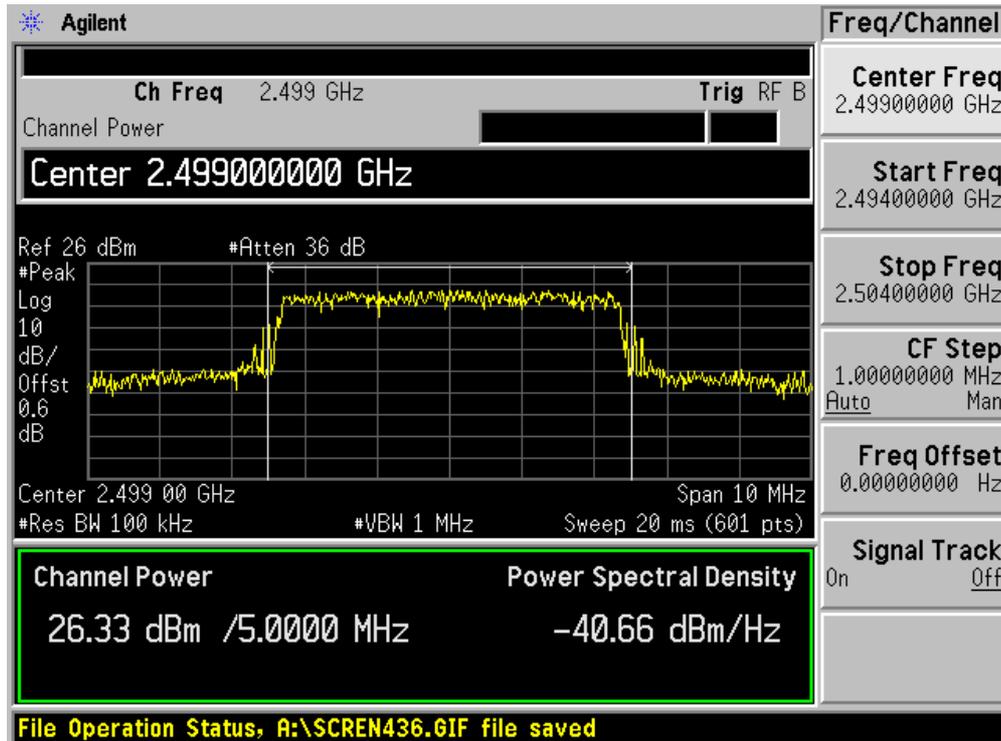
Product	:	I600 WiMAX MODEM
Test Item	:	RF Power Output (Conducted Measurement)
Test Site	:	AC-4
Test Mode	:	Mode 1: Transmit (5MHz Bandwidth)

Channel	Frequency (MHz)	Power Output of Different Type Modulation (dBm)			Limit (dBm)	Result
		QPSK	16QAM	64QAM		
Low	2499	26.58	26.33	N/A	33	Pass
Middle	2600	26.81	26.52	N/A	33	Pass
High	2687	26.89	26.63	N/A	33	Pass

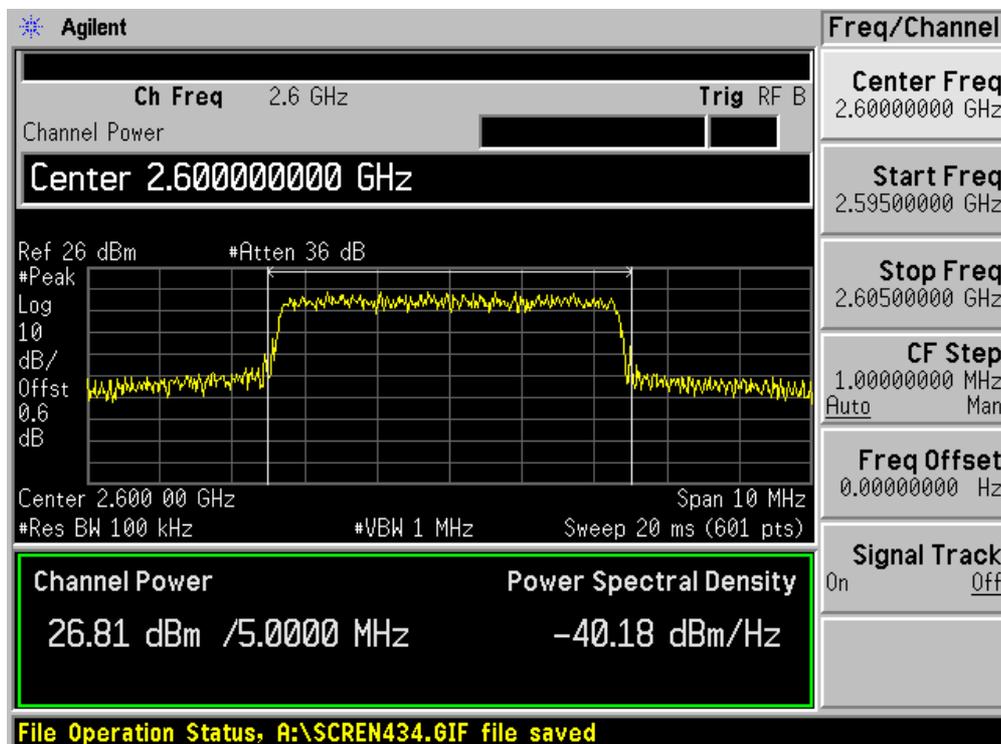
Channel - Low (2499MHz-QPSK)



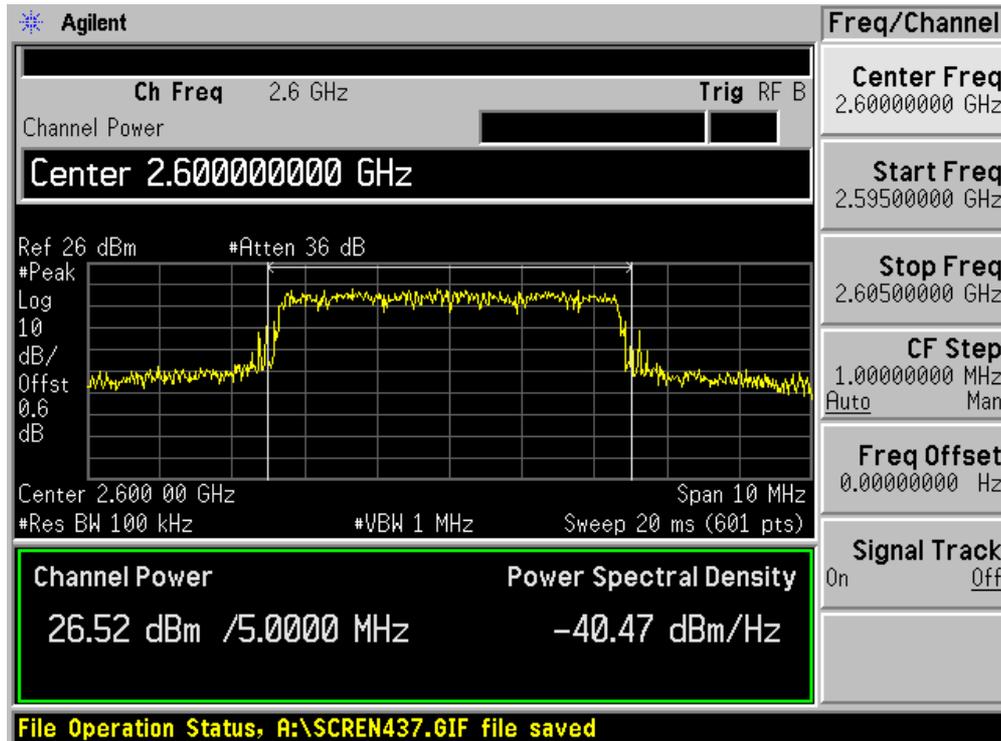
Channel - Low (2499MHz-16QAM)



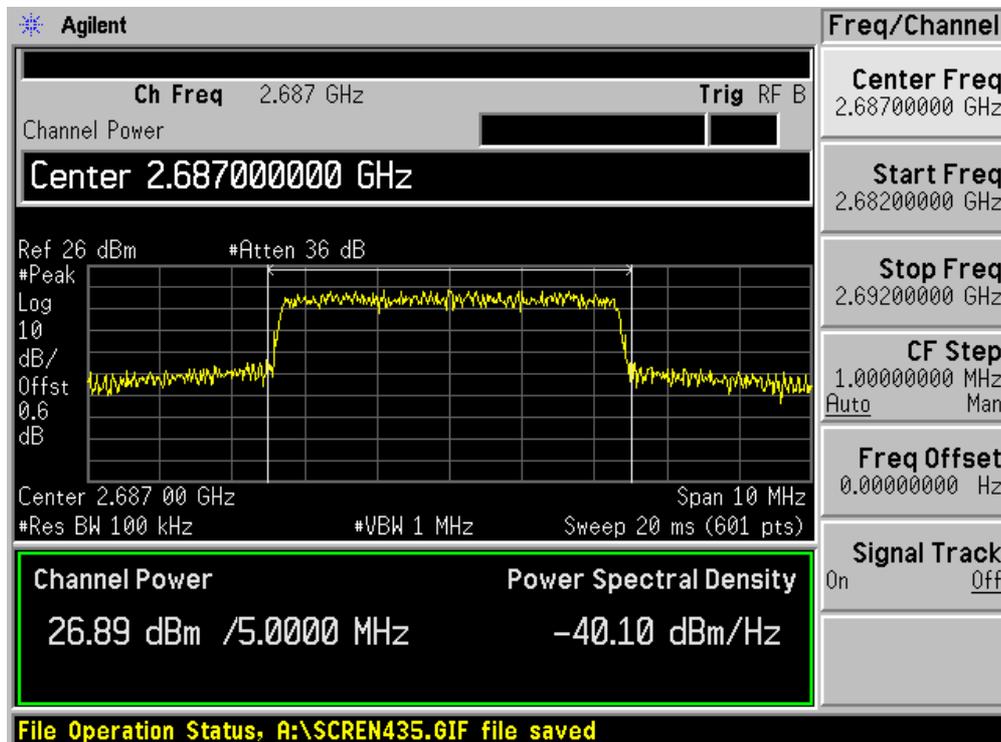
Channel - Middle (2600MHz-QPSK)



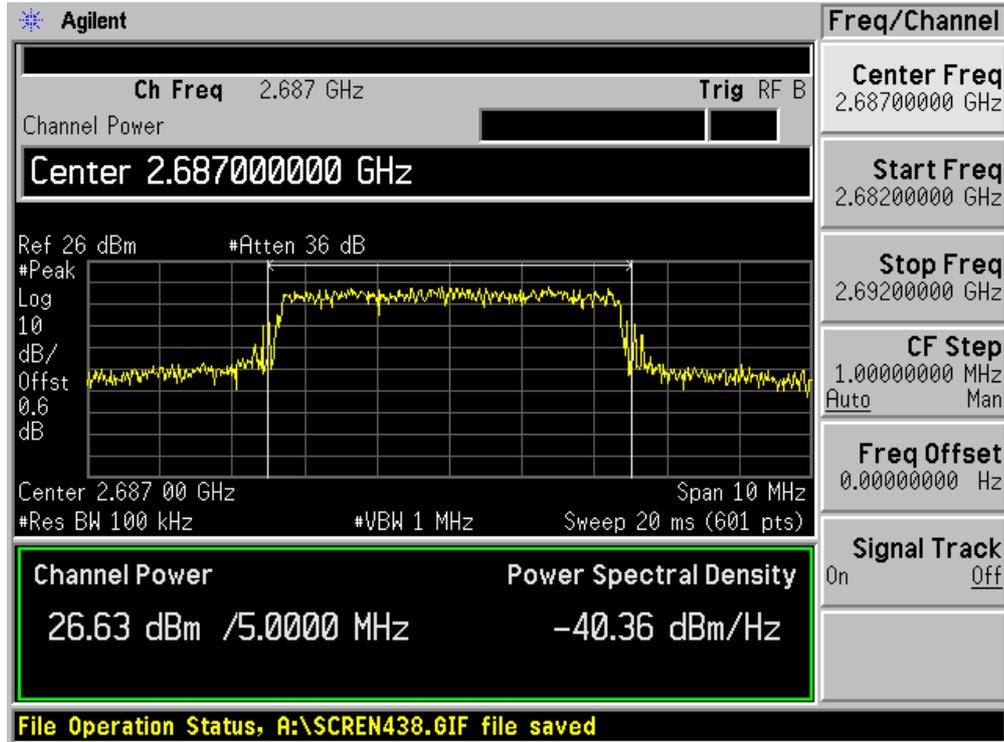
Channel - Middle (2600MHz-16QAM)



Channel - High (2687MHz-QPSK)



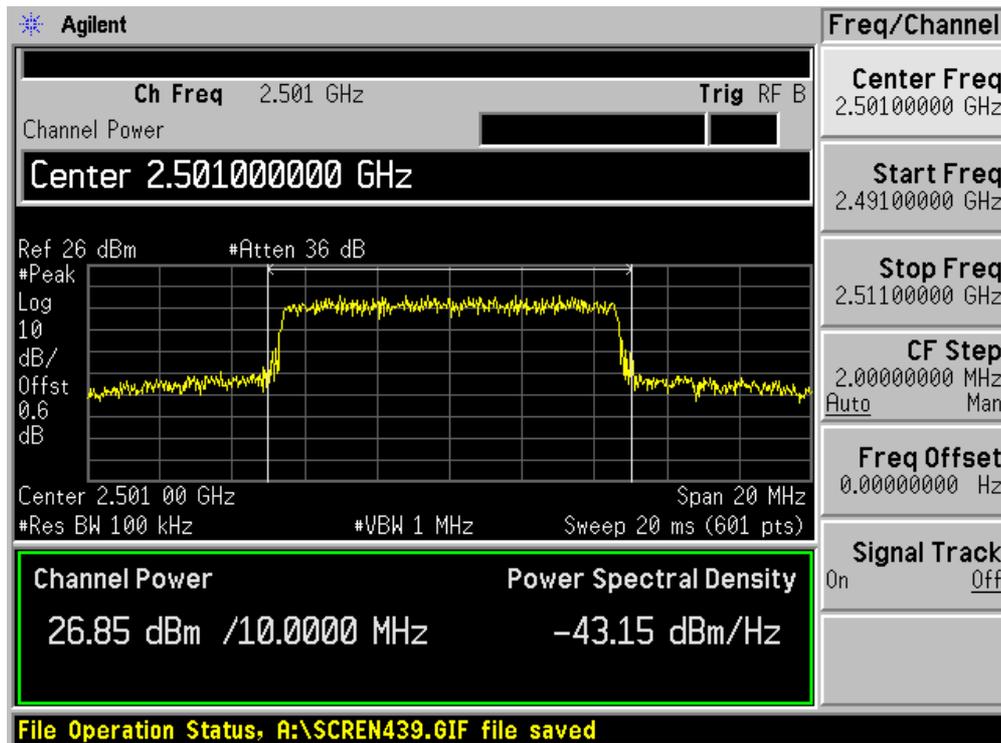
Channel - High (2687MHz--16QAM)



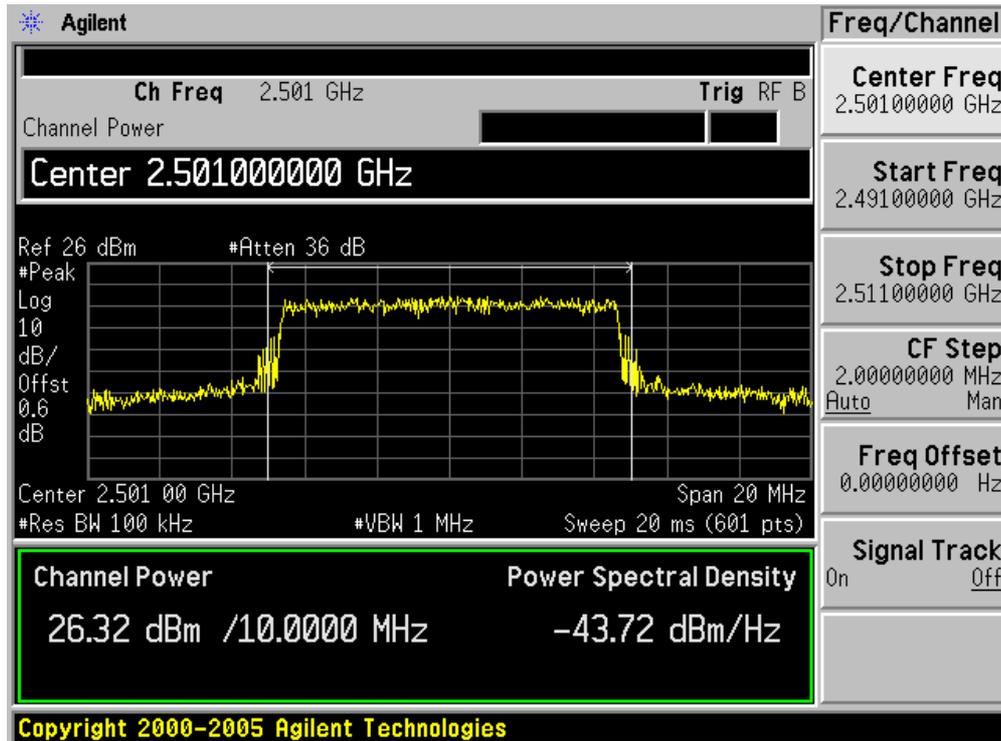
Product	:	I600 WiMAX MODEM
Test Item	:	RF Power Output (Conducted Measurement)
Test Site	:	AC-4
Test Mode	:	Mode 2: Transmit (10MHz Bandwidth)

Channel	Frequency (MHz)	Power Output of Different Type Modulation (dBm)			Limit (dBm)	Result
		QPSK	16QAM	64QAM		
Low	2499	26.85	26.32	N/A	33	Pass
Middle	2600	26.45	26.46	N/A	33	Pass
High	2687	26.35	26.37	N/A	33	Pass

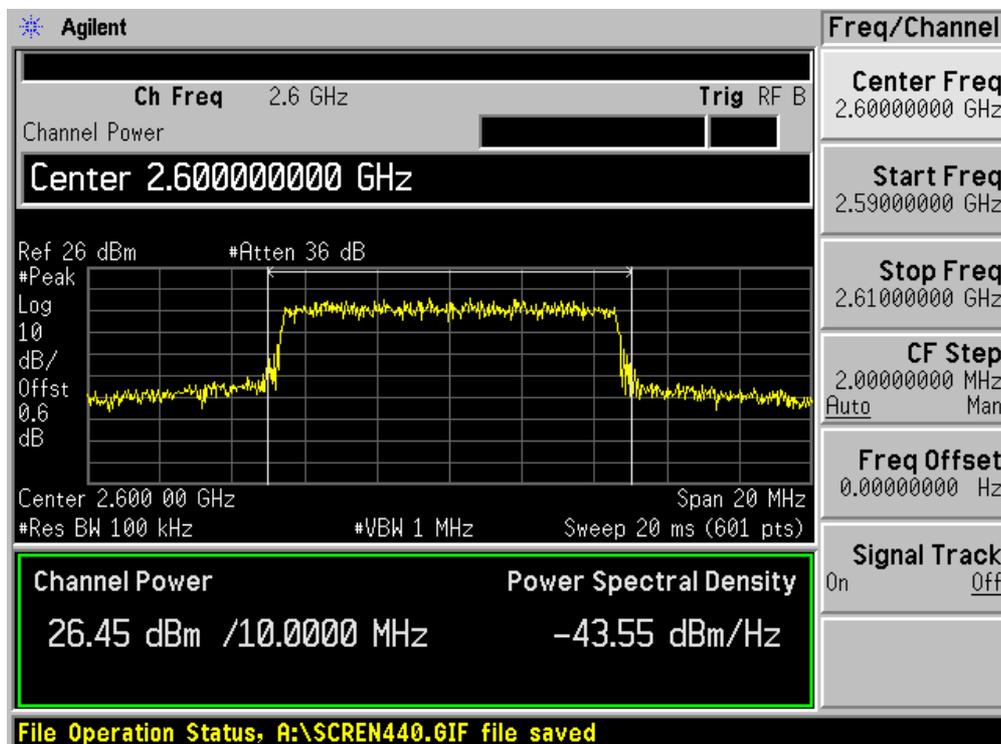
Channel - Low (2501MHz-QPSK)



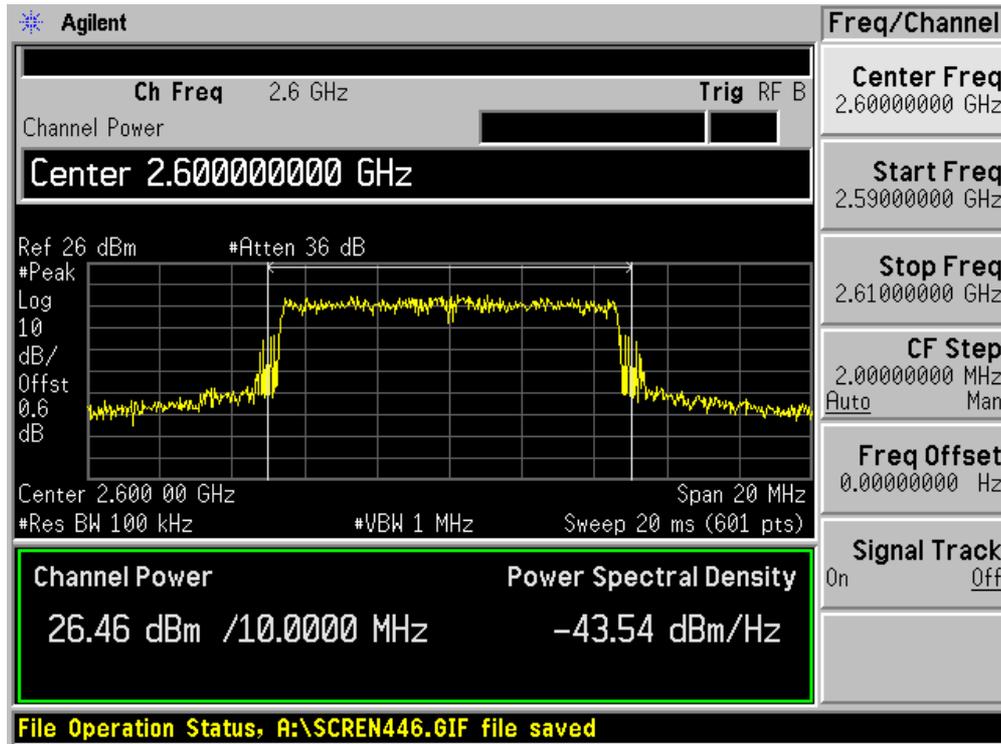
Channel - Low (2501MHz-16QAM)



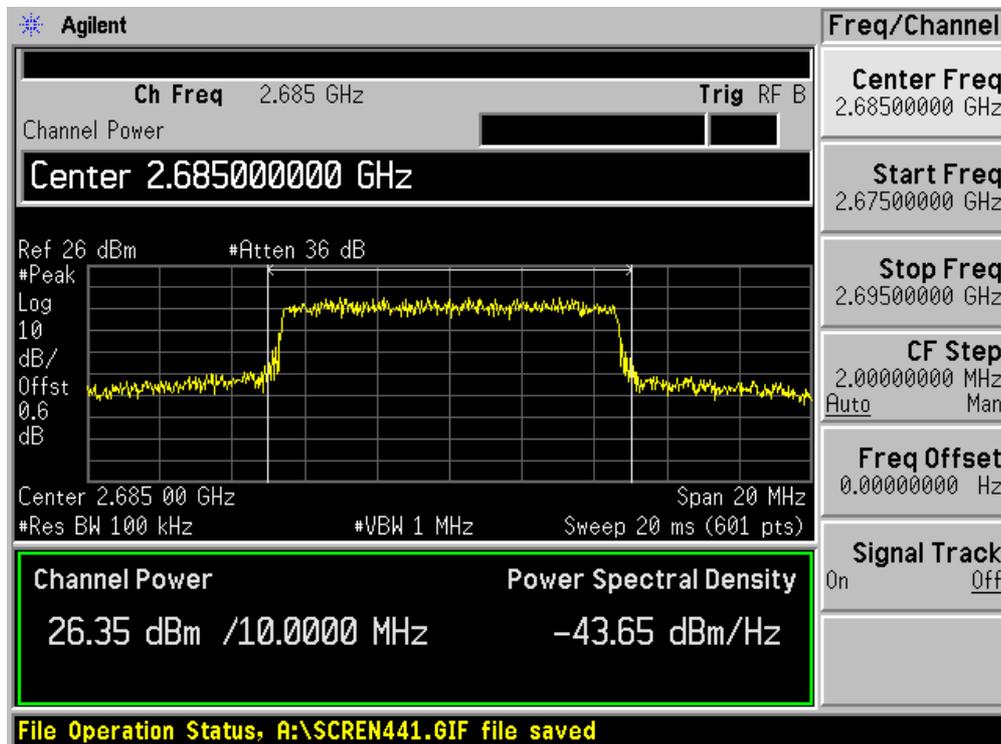
Channel - Middle (2600MHz-QPSK)



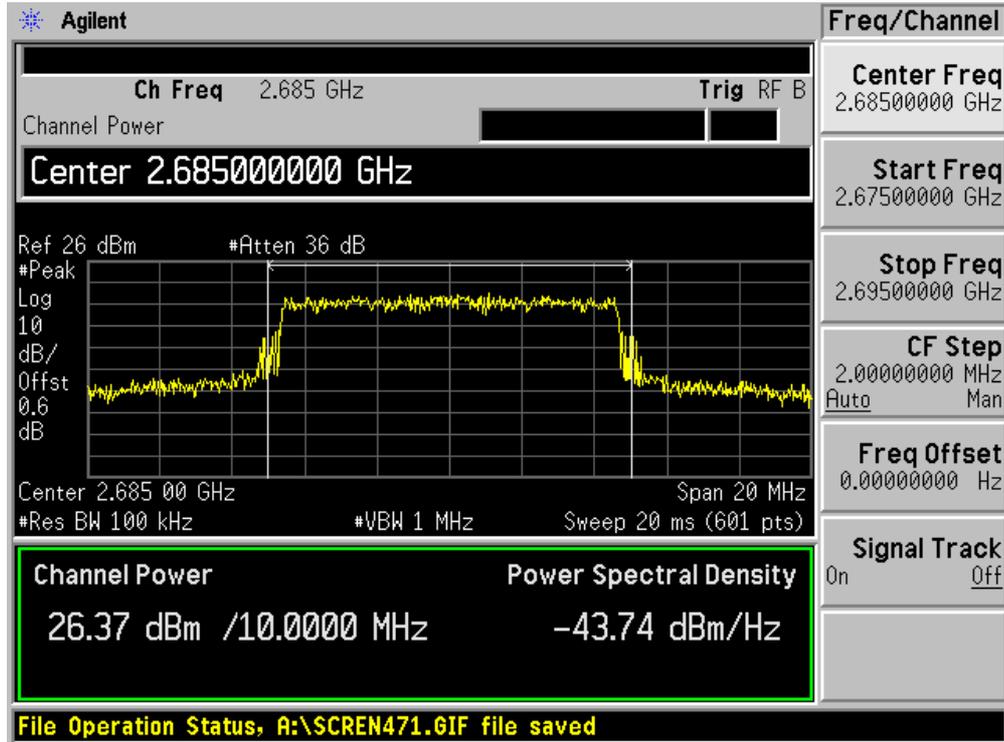
Channel - Middle (2600MHz-16QAM)



Channel - High (2685MHz-QPSK)



Channel - High (2685MHz--16QAM)



Product	:	I600 WiMAX MODEM
Test Item	:	RF Power Output (Radiated Measurement)
Test Site	:	AC-4
Test Mode	:	Mode 1: Transmit (5MHz Bandwidth)

Frequency (MHz)	SA Reading (dBm)	Ant.Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)
Low Channel (2499MHz) – QPSK							
2499	-24.22	H	16.78	4.12	10.59	23.25	N/A
2499	-16.72	V	24.28	4.12	10.59	30.75	N/A
Middle Channel (2600MHz) – QPSK							
2600	-24.46	H	16.54	4.26	10.77	23.05	N/A
2600	-16.63	V	24.37	4.26	10.77	30.88	N/A
High Channel (2687MHz) – QPSK							
2687	-24.64	H	16.36	4.16	10.95	23.15	N/A
2687	-16.54	V	24.46	4.16	10.95	31.25	N/A

Frequency (MHz)	SA Reading (dBm)	Ant.Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)
Low Channel (2499MHz) – 16QAM							
2499	-24.93	H	16.07	4.12	10.59	22.54	N/A
2499	-16.83	V	24.17	4.12	10.59	30.64	N/A
Middle Channel (2600MHz) – 16QAM							
2600	-25.03	H	15.97	4.26	10.77	22.48	N/A
2600	-16.94	V	24.06	4.26	10.77	30.57	N/A
High Channel (2687MHz) – 16QAM							
2687	-24.87	H	16.13	4.16	10.95	22.92	N/A
2687	-16.14	V	24.86	4.16	10.95	31.65	N/A

Product	:	I600 WiMAX MODEM
Test Item	:	RF Power Output (Radiated Measurement)
Test Site	:	AC-4
Test Mode	:	Mode 2: Transmit (10MHz Bandwidth)

Frequency (MHz)	SA Reading (dBm)	Ant.Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)
Low Channel (2501MHz) – QPSK							
2501	-25.03	H	15.97	4.13	10.59	22.43	N/A
2501	-16.94	V	24.06	4.13	10.59	30.52	N/A
Middle Channel (2600MHz) –QPSK							
2600	-25.11	H	16.09	4.26	10.77	22.60	N/A
2600	-16.86	V	24.34	4.26	10.77	30.85	N/A
High Channel (2685MHz) –QPSK							
2685	-25.24	H	16.06	4.16	10.94	22.84	N/A
2685	-16.58	V	24.72	4.16	10.94	31.50	N/A

Frequency (MHz)	SA Reading (dBm)	Ant.Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)
Low Channel (2501MHz) – 16QAM							
2501	-25.18	H	15.82	4.13	10.59	22.28	N/A
2501	-17.26	V	23.74	4.13	10.59	30.20	N/A
Middle Channel (2600MHz) – 16QAM							
2600	-25.89	H	15.31	4.26	10.77	21.82	N/A
2600	-17.05	V	24.15	4.26	10.77	30.66	N/A
High Channel (2685MHz) – 16QAM							
2685	-25.65	H	15.65	4.16	10.94	22.43	N/A
2685	-16.84	V	24.46	4.16	10.94	31.24	N/A

4. Occupied Bandwidth

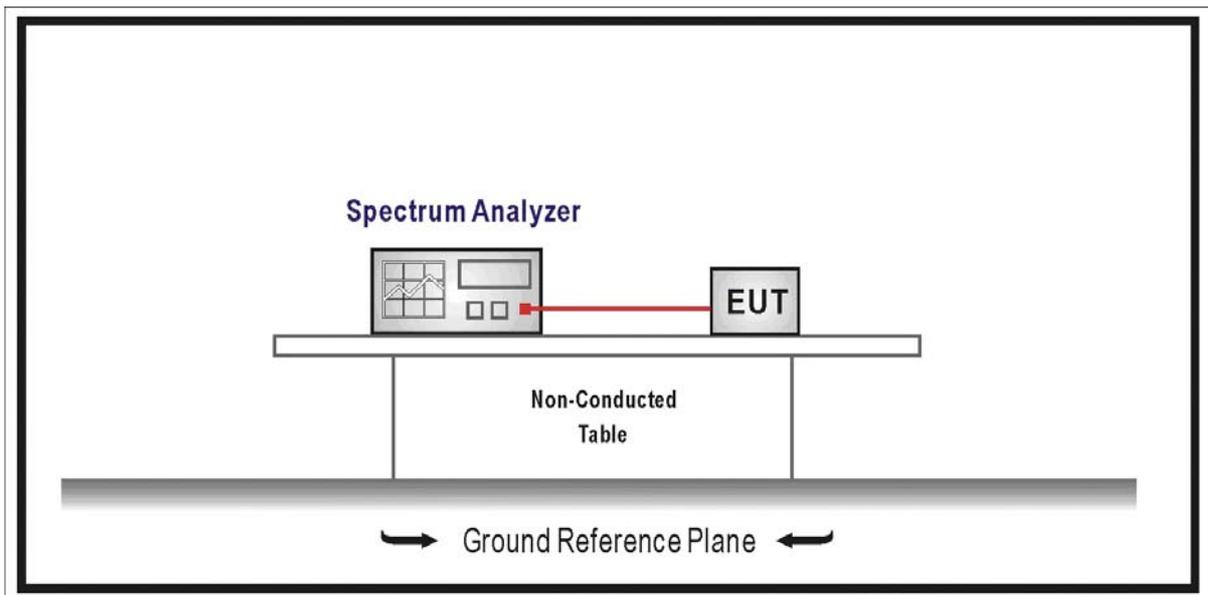
4.1. Test Equipment

Occupied Bandwidth / AC-4

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2008/06/11
Coaxial Cable	Huber+Suhner	AC4-RF	09	2007/11/25
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH007	2008/03/09

Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

4.2. Test Setup



4.3. Limit

N/A

4.4. Test Procedure

Occupied Bandwidth would be determined by the occupied bandwidth measurement function of the spectrum analyzer.

Spectrum analyzer settings as following:

- Set span to encompass the entire emission bandwidth (EBW) of the signal.

- Set RBW = 1% of rated occupied bandwidth, VBW \geq RBW, Detector mode = Peak.

4.5. Uncertainty

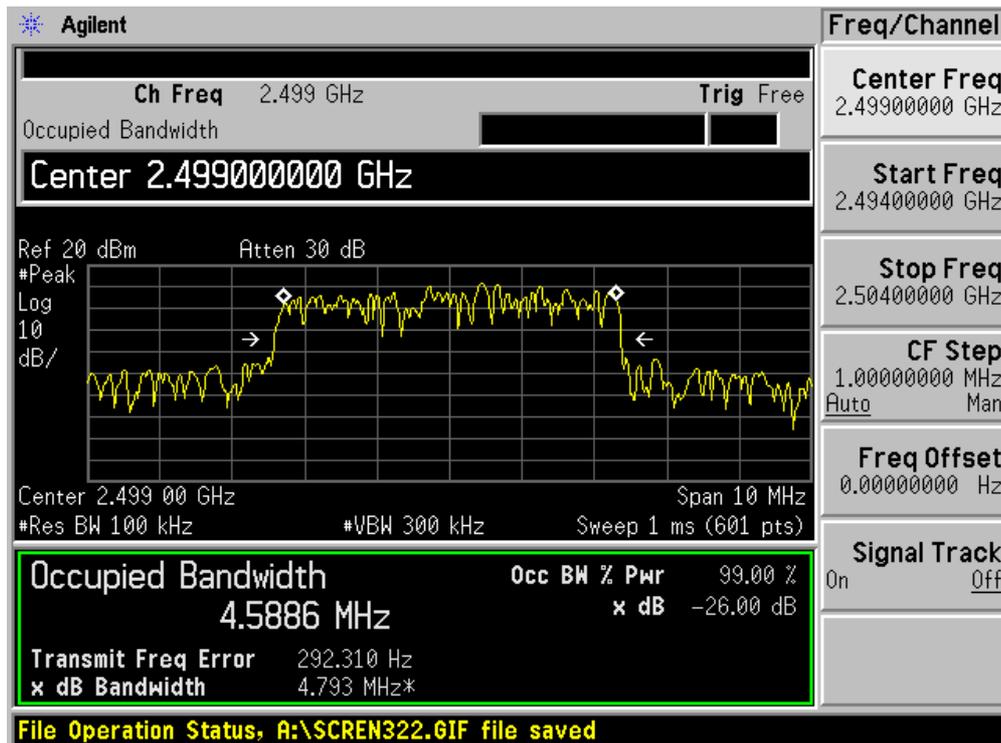
The measurement uncertainty is defined as ± 1 kHz

4.6. Test Result

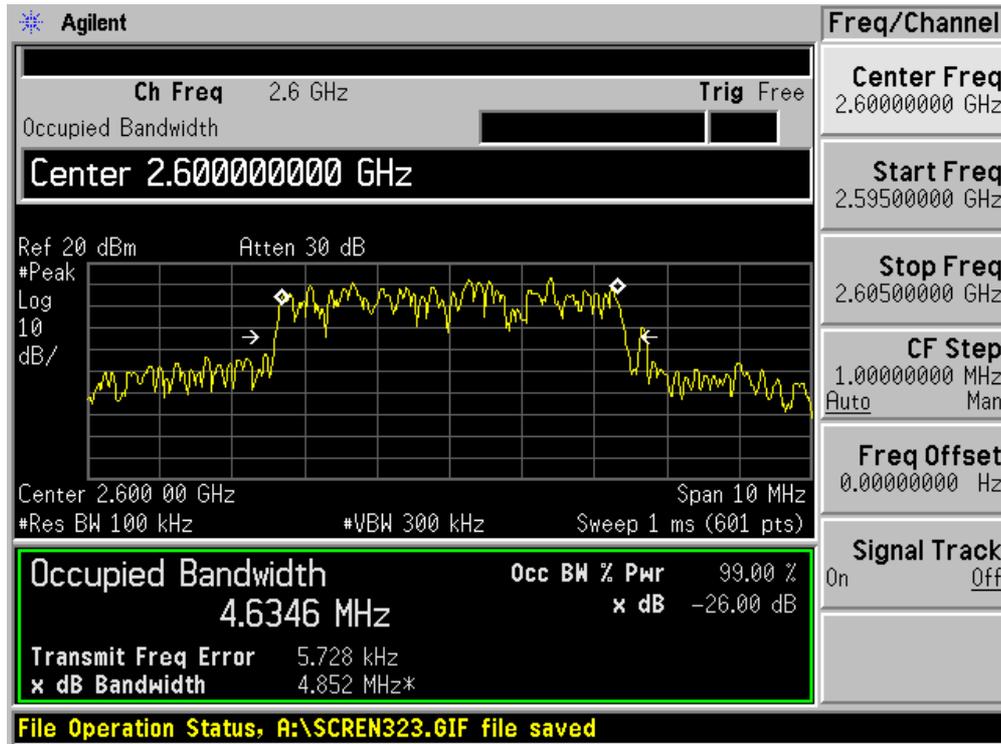
Product	:	I600 WiMAX MODEM
Test Item	:	Occupied Bandwidth
Test Site	:	AC-4
Test Mode	:	Mode 1: Transmit (5MHz Bandwidth)

Channel	Frequency (MHz)	26dB Occupied Bandwidth (kHz)	Limit (kHz)
Low	2499	4793	N/A
Middle	2600	4852	N/A
High	2687	4868	N/A

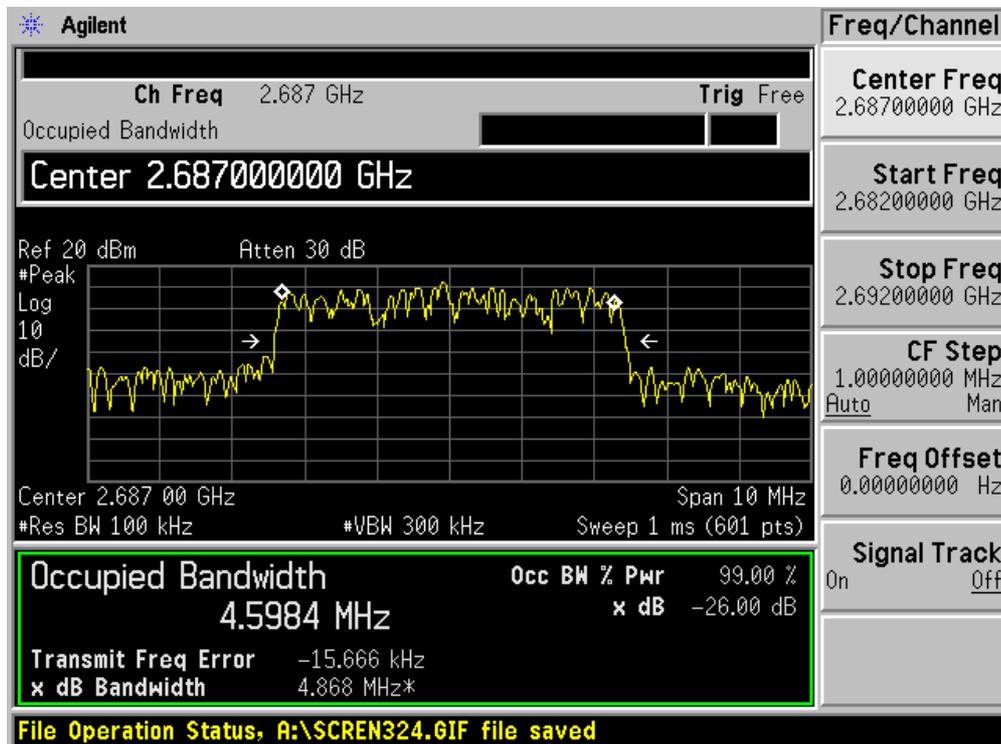
Channel - Low (2499MHz)



Channel - Middle (2600MHz)



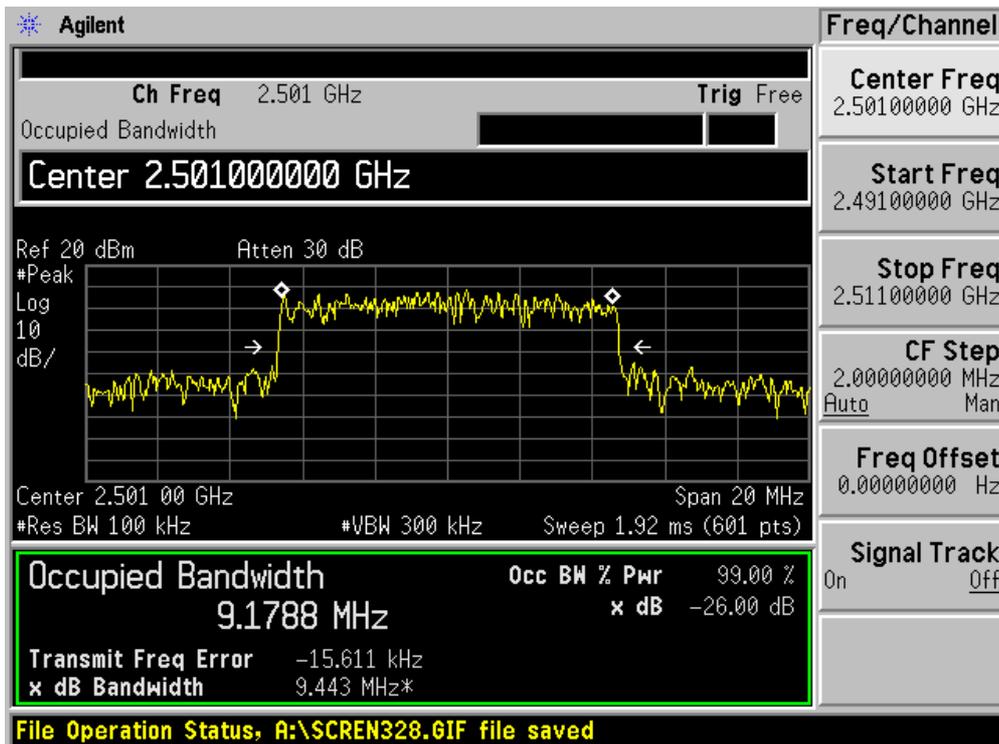
Channel - High (2687MHz)



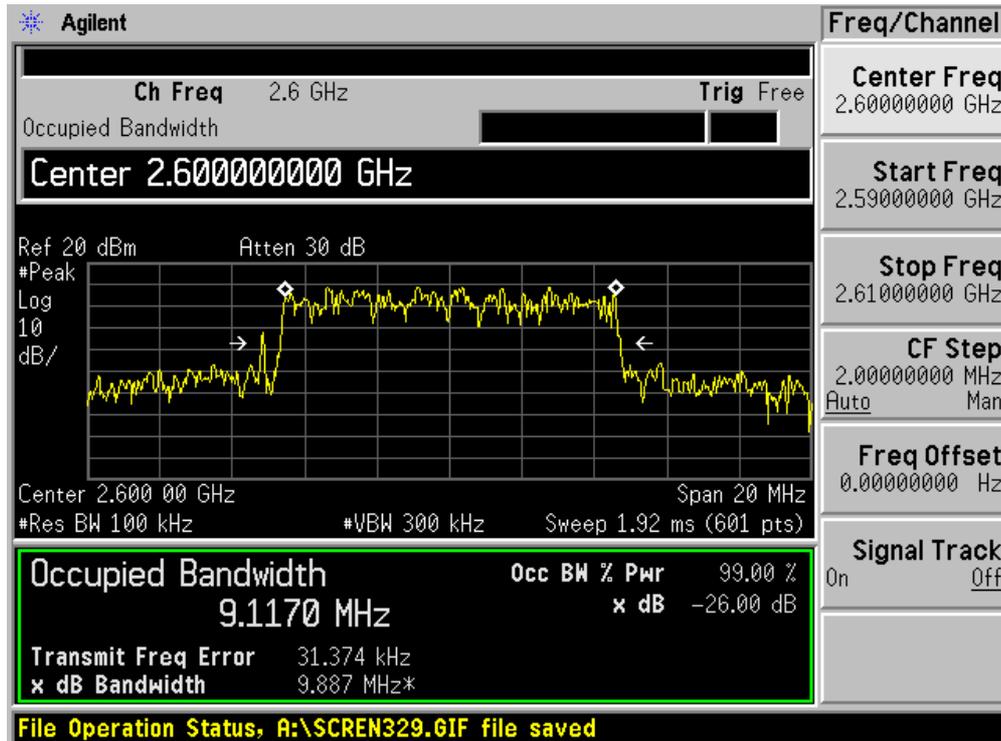
Product	:	I600 WiMAX MODEM
Test Item	:	Occupied Bandwidth
Test Site	:	AC-4
Test Mode	:	Mode 2: Transmit (10MHz Bandwidth)

Channel	Frequency (MHz)	26dB Occupied Bandwidth (kHz)	Limit (kHz)
Low	2501	9443	N/A
Middle	2600	9887	N/A
High	2685	9955	N/A

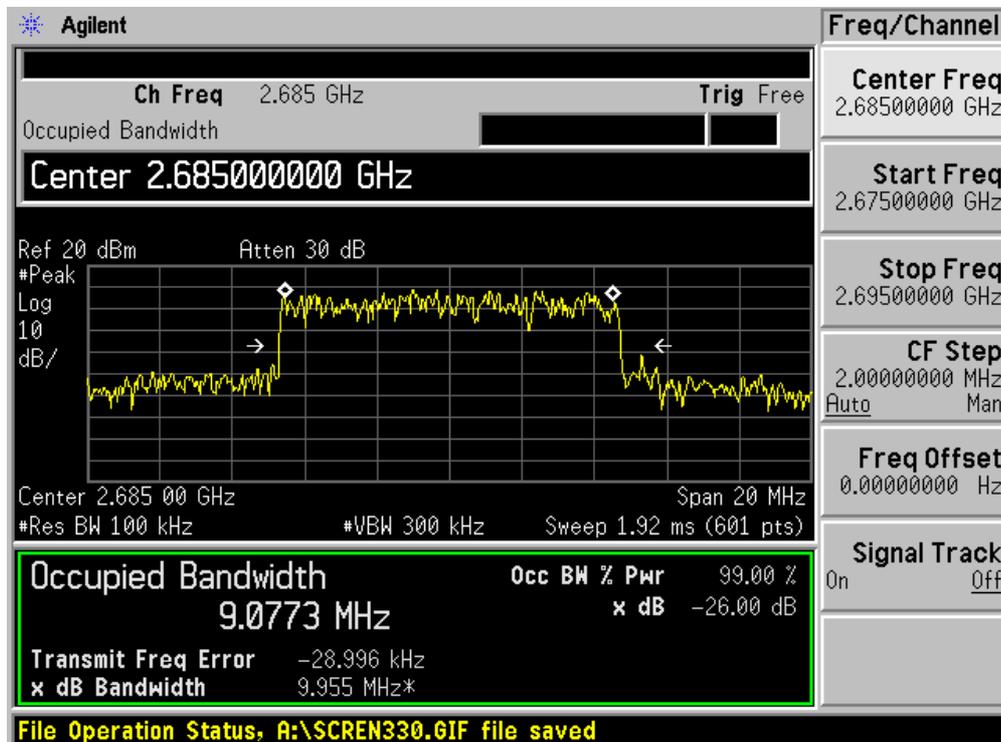
Channel - Low (2501MHz)



Channel - Middle (2600MHz)



Channel - High (2685MHz)



5. Band Edge

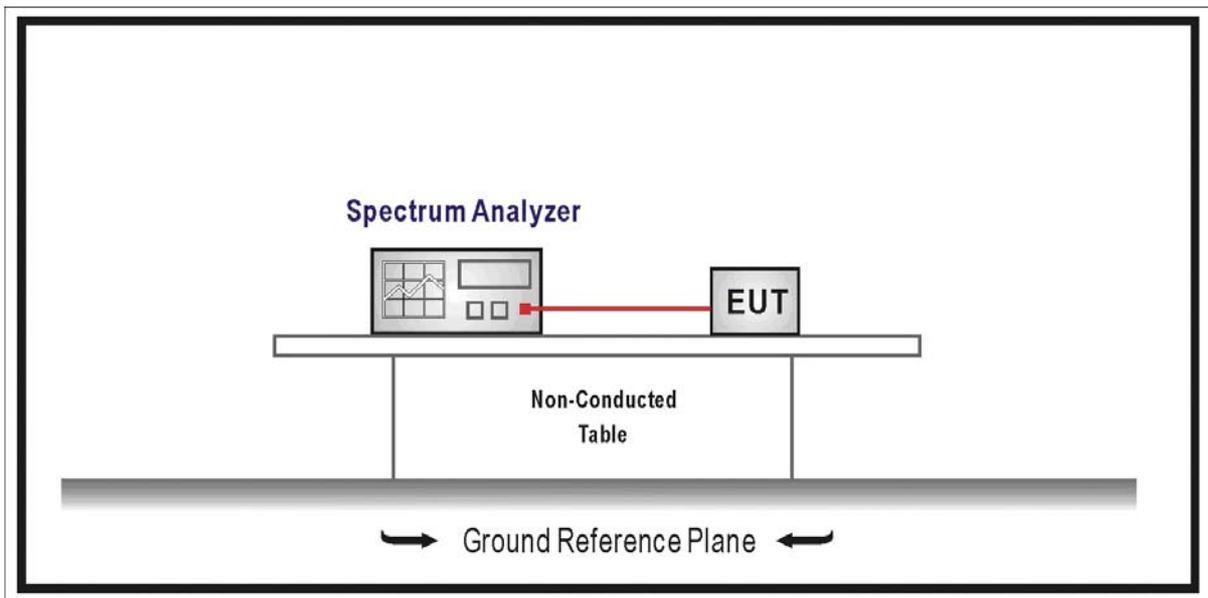
5.1. Test Equipment

Band Edge / AC-4

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2008/06/11
Coaxial Cable	Huber+Suhner	AC4-RF	09	2007/11/25
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH007	2008/03/09

Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

5.2. Test Setup



5.3. Limit

For fixed and temporary fixed digital stations, the attenuation shall be not less than $43 + 10 \log (P)$ dB, unless a documented interference complaint is received from an adjacent channel licensee.

5.4. Test Procedure

- Band edge would be conducted with the EUT operated the nearest channel to the band edge.

- To measure the emission level at the 1 MHz bands immediately outside the frequency band, Set RBW = 1% of rated occupied bandwidth, VBW \geq RBW, Detector mode = RMS.

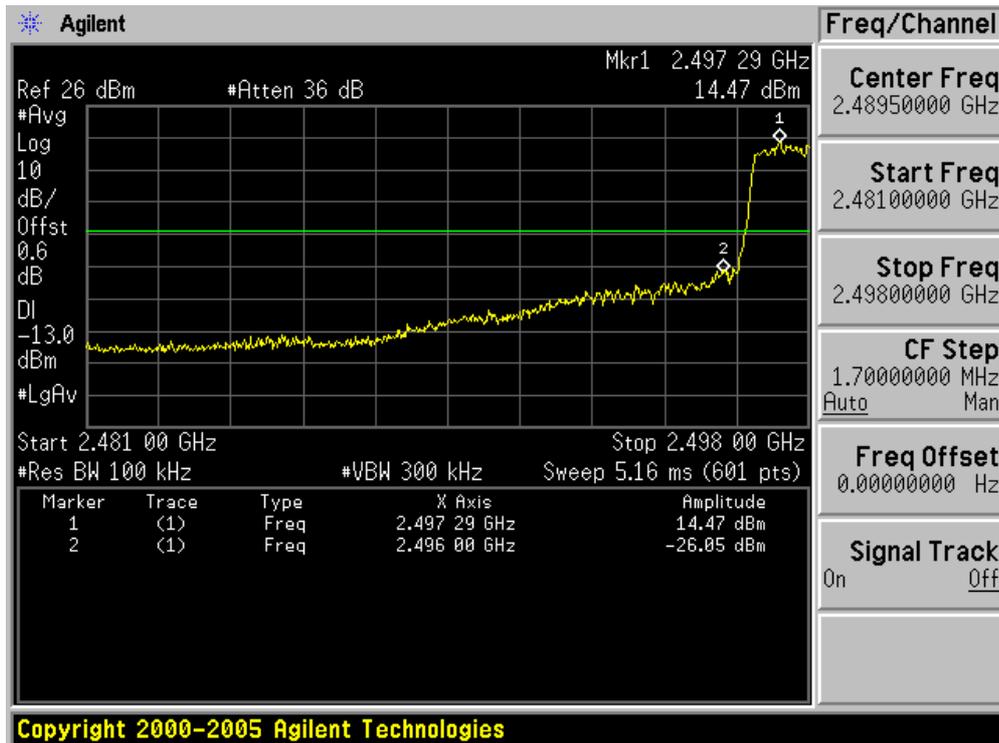
5.5. Uncertainty

The measurement uncertainty is defined as ± 1.27 dB

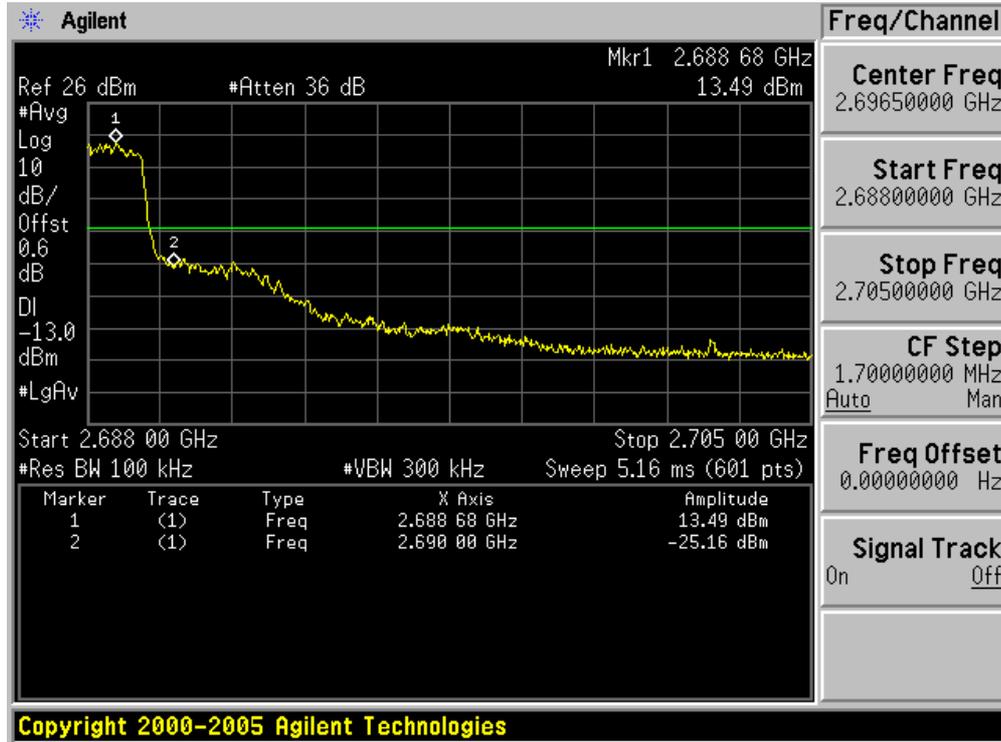
5.6. Test Result

Product	:	I600 WiMAX MODEM
Test Item	:	Band Edge
Test Site	:	AC-4
Test Mode	:	Mode 1: Transmit (5MHz Bandwidth)
Test Result		Pass

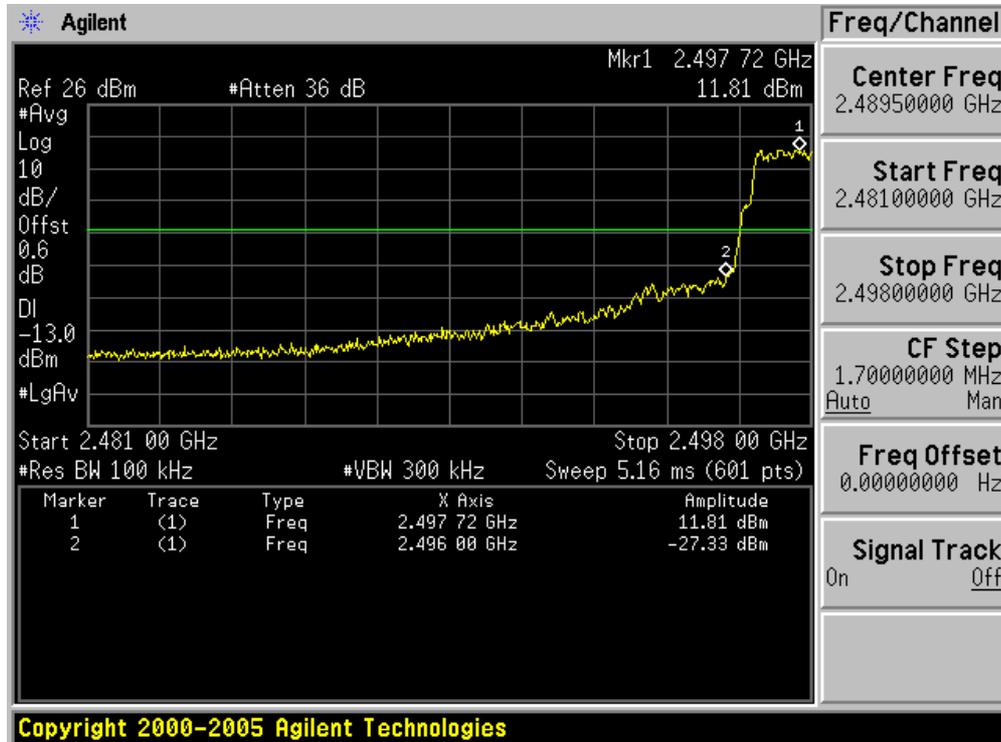
Channel - Low (2499MHz) – QPSK



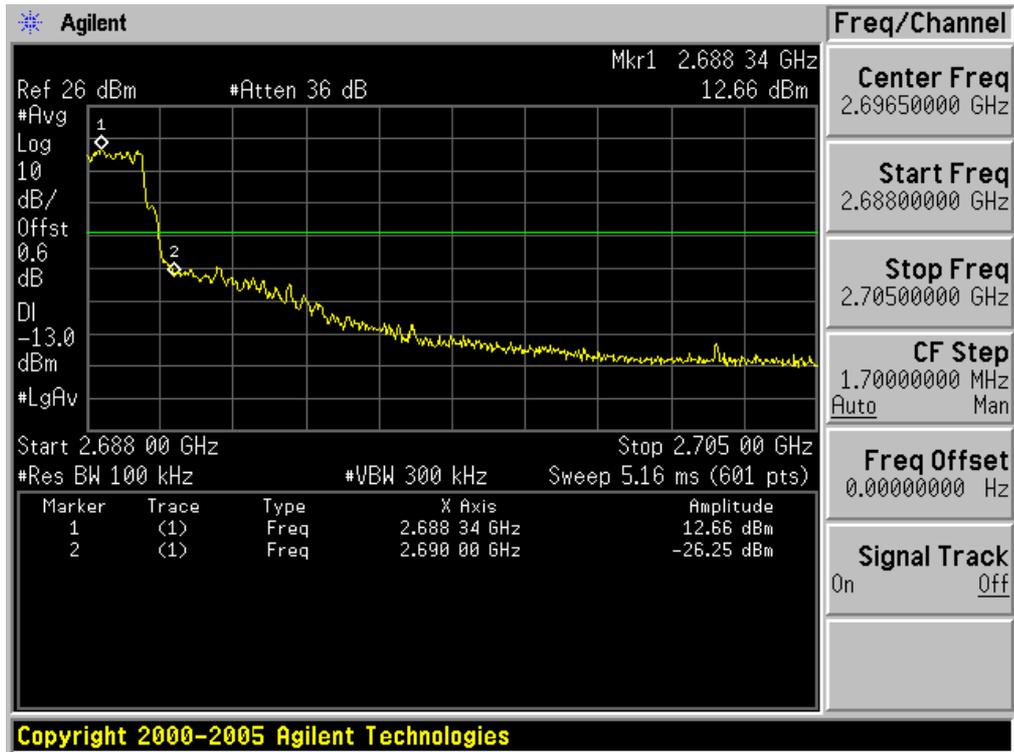
Channel - Low (2687MHz) – QPSK



Channel - High (2499MHz) – 16QAM



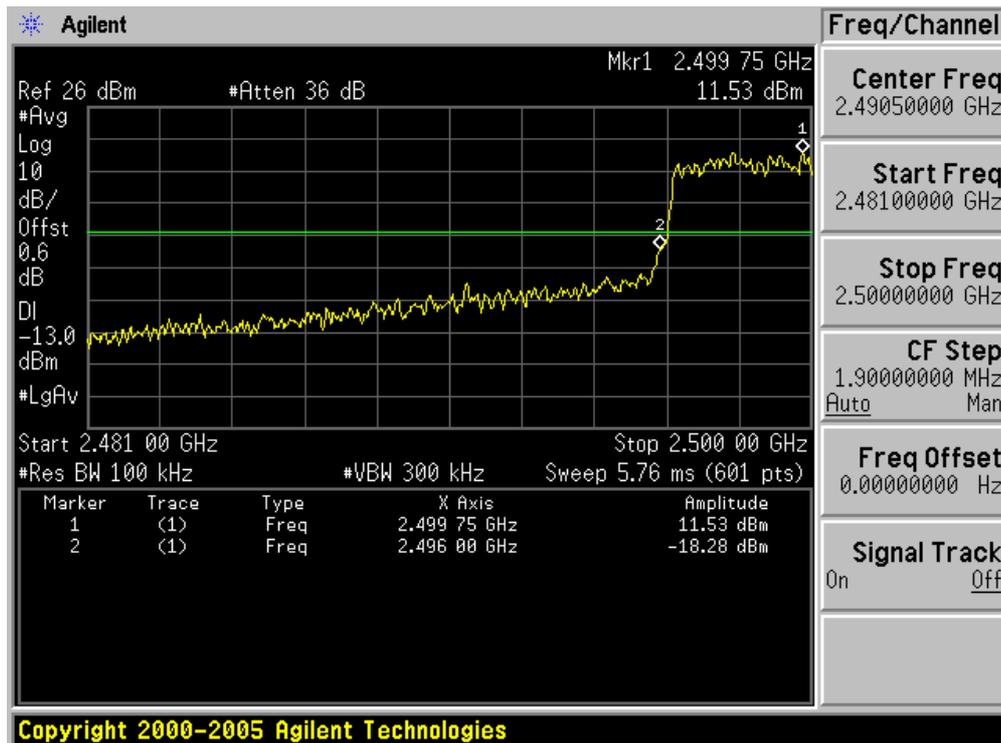
Channel - High (2499MHz) – 16QAM



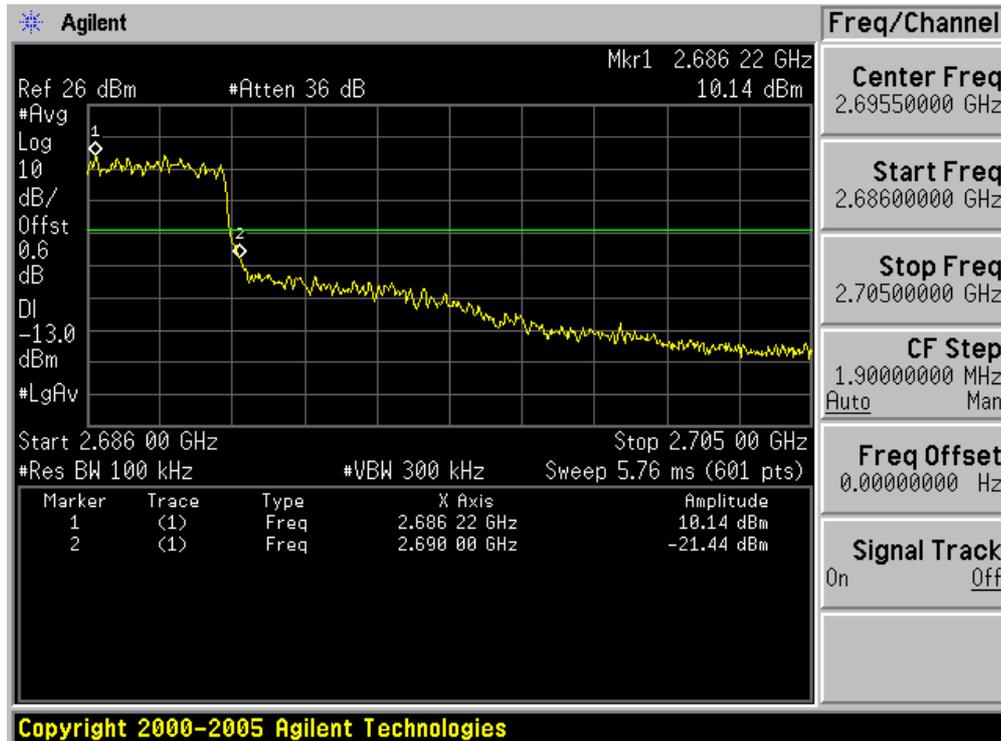
Freq/Channel
Center Freq 2.69650000 GHz
Start Freq 2.68800000 GHz
Stop Freq 2.70500000 GHz
CF Step 1.70000000 MHz Auto Man
Freq Offset 0.00000000 Hz
Signal Track On Off

Product	:	I600 WiMAX MODEM
Test Item	:	Band Edge
Test Site	:	AC-4
Test Mode	:	Mode 2: Transmit (10MHz Bandwidth)
Test Result		Pass

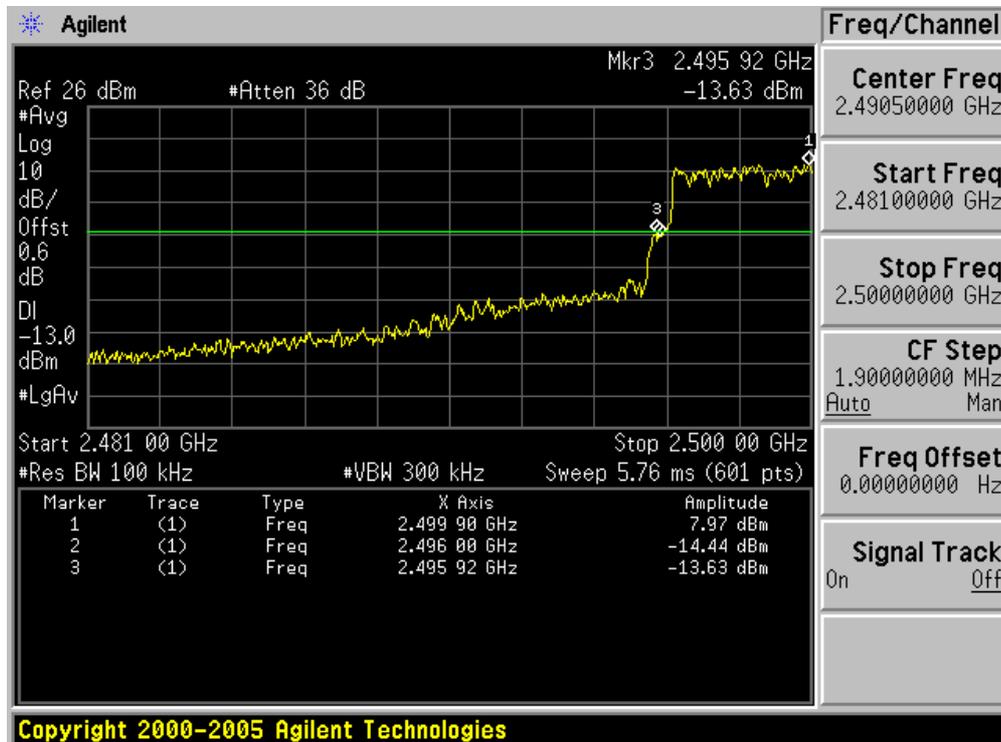
Channel - Low (2501MHz) - QPSK



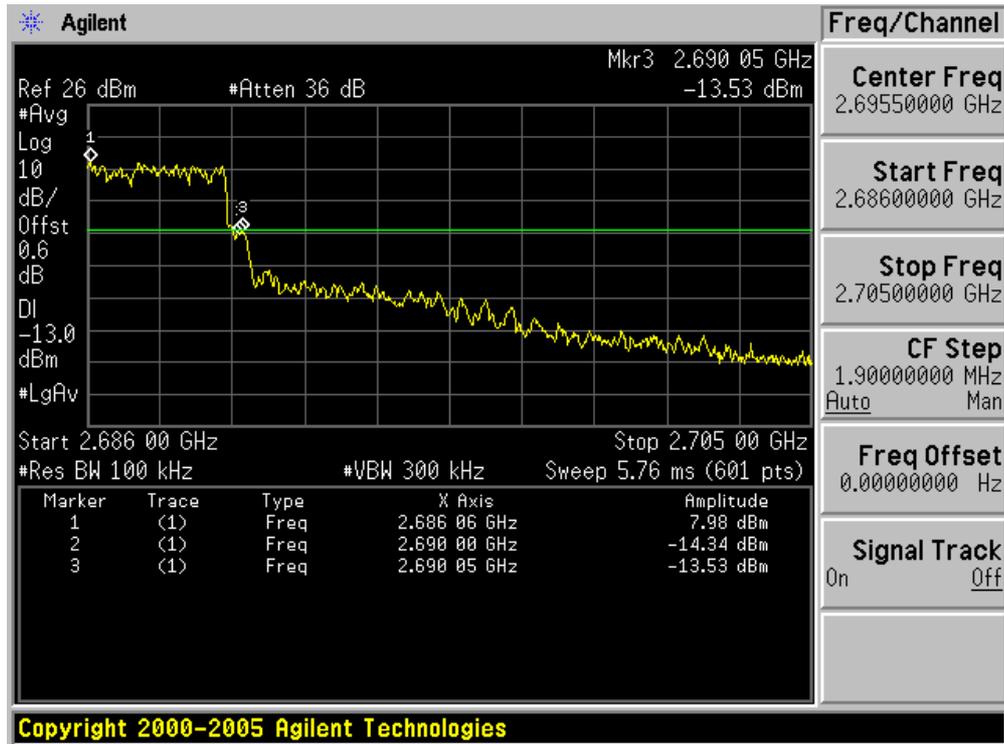
Channel - High (2685MHz) - QPSK



Channel - Low (2501MHz) – 16QAM



Channel - Low (2685MHz) – 16QAM



6. Spurious Emission at Antenna Terminals

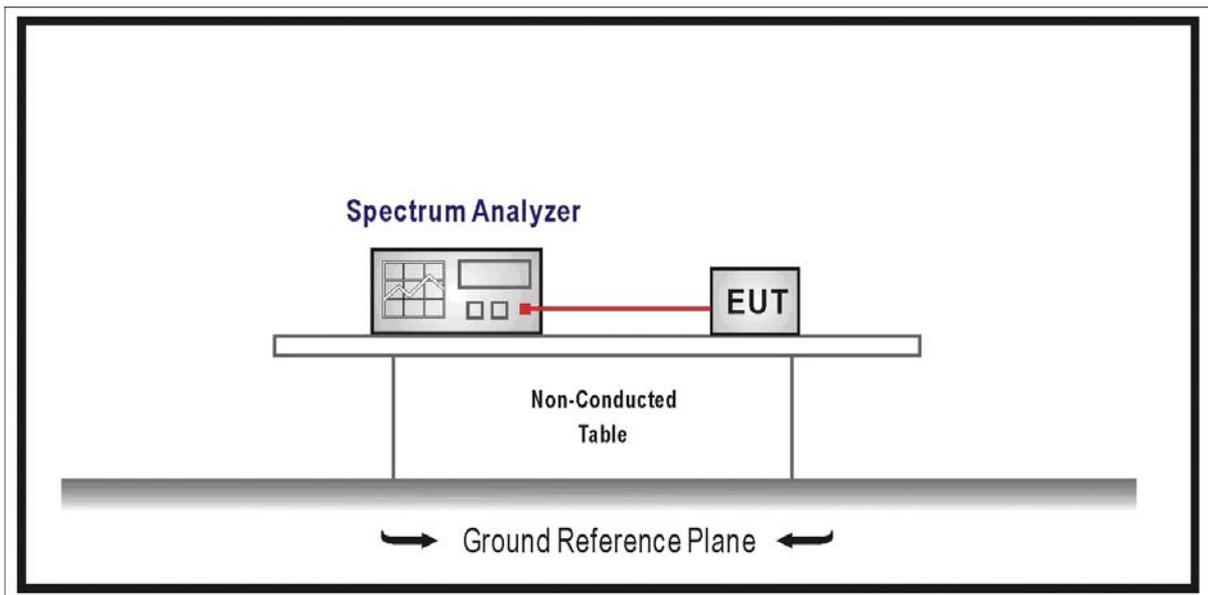
6.1. Test Equipment

Spurious Emission at Antenna Terminals / AC-4

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2008/06/11
Coaxial Cable	Huber+Suhner	AC4-RF	09	2007/11/25
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH007	2008/03/09

Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

6.2. Test Setup



6.3. Limit

For mobile digital stations, the attenuation factor shall be not less than $43 + 10\log(P)$ dB

6.4. Test Procedure

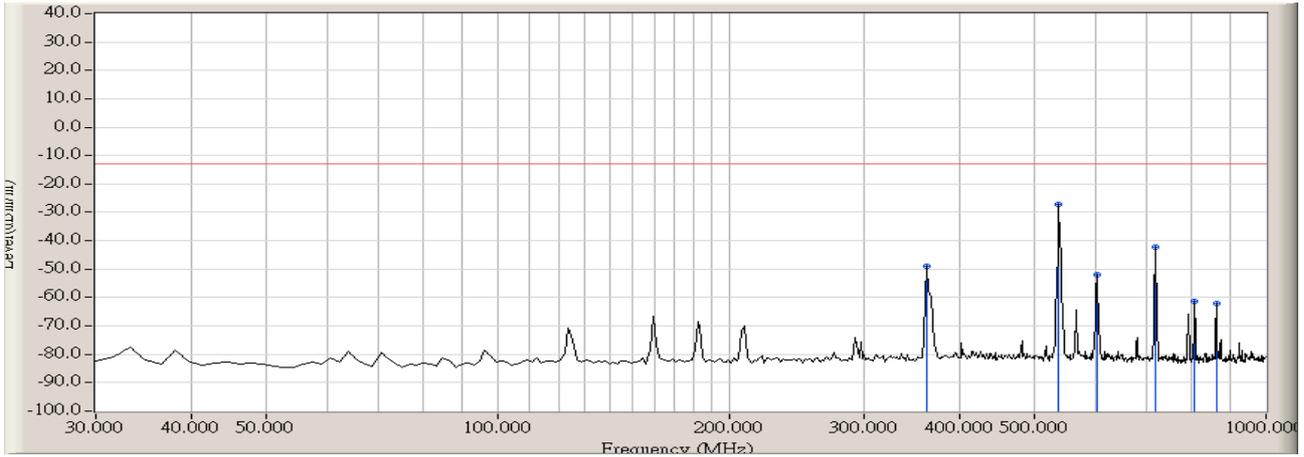
- Spurious emission at antenna terminals would be conducted with the EUT operated the 3 channels: low, middle and high operational frequency range.
- Set RBW = 100 kHz for below 1GHz and RBW = 1MHz for above 1GHz, VBW \geq RBW, Detector mode = Peak, the frequency range is scanned from 30MHz to 10th harmonics.

6.5. Uncertainty

The measurement uncertainty is defined as ± 1.27 dB

6.6. Test Result

Engineer : Robin	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/10/25 - 09:28
Limit : FCC_Part27_WiMax_PK	Margin : 0
EUT : I600 WiMAX MODEM	Probe : - Line1
Power : AC 120V/60Hz	Note : Mode 1: 5MHz Bandwidth QPSK 2499MHz

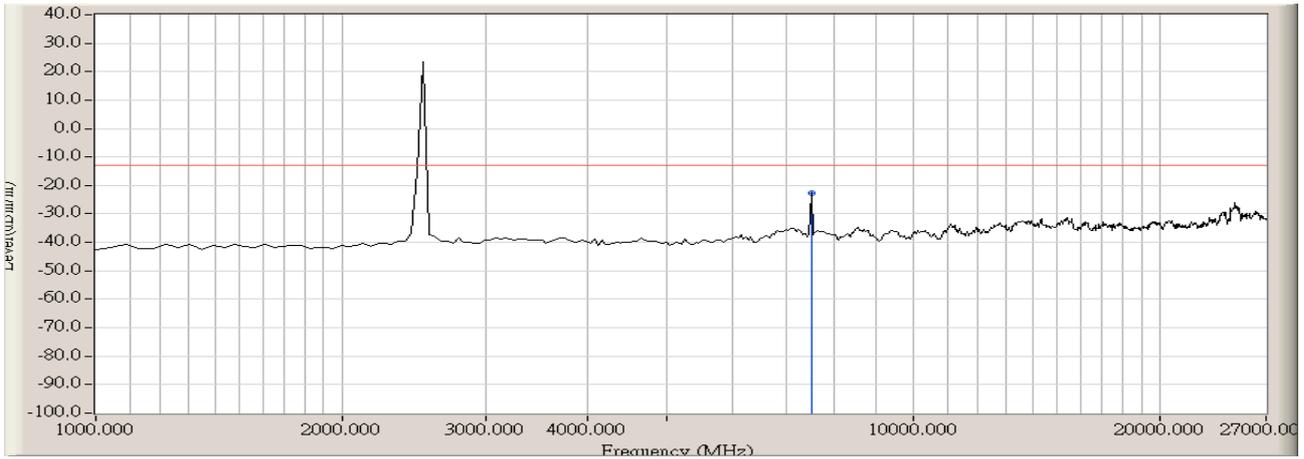


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1		361.417	0.103	-48.944	-48.841	-35.841	-13.000	PEAK
2	*	537.633	0.130	-27.163	-27.033	-14.033	-13.000	PEAK
3		602.300	0.142	-52.012	-51.870	-38.870	-13.000	PEAK
4		717.083	0.165	-42.208	-42.043	-29.043	-13.000	PEAK
5		807.617	0.178	-61.522	-61.344	-48.344	-13.000	PEAK
6		860.967	0.188	-62.163	-61.975	-48.975	-13.000	PEAK

Note:

1. All Readings is peak measurements.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Engineer : Robin	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/10/25 - 09:29
Limit : FCC_Part27_WiMax_PK	Margin : 0
EUT : I600 WiMAX MODEM	Probe : - Line1
Power : AC 120V/60Hz	Note : Mode 1: 5MHz Bandwidth QPSK 2499MHz

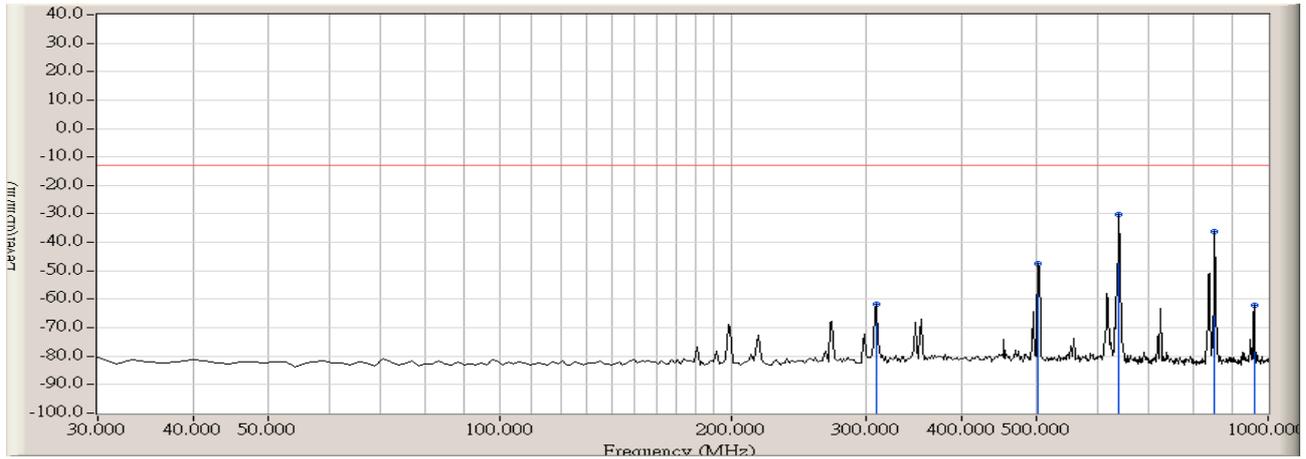


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1	*	7500.000	1.200	-23.704	-22.504	-9.504	-13.000	PEAK

Note:

1. All Readings is peak measurements.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Engineer : Robin	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/10/25 - 09:30
Limit : FCC_Part27_WiMax_PK	Margin : 0
EUT : I600 WiMAX MODEM	Probe : - Line1
Power : AC 120V/60Hz	Note : Mode 1: 5MHz Bandwidth QPSK 2600MHz

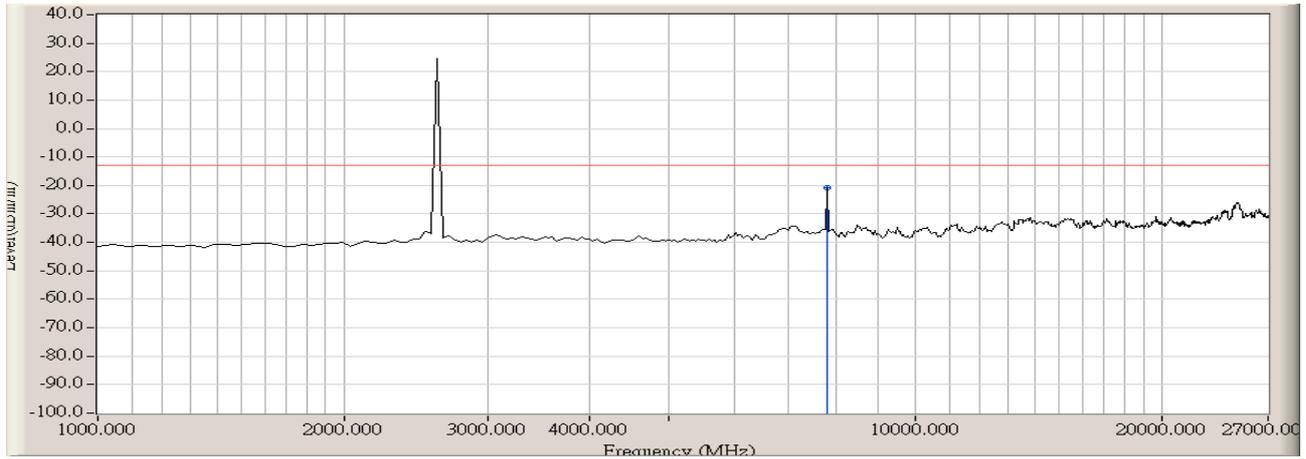


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1	309.683	0.094	-61.757	-61.663	-48.663	-13.000	PEAK
2	502.067	0.130	-47.706	-47.576	-34.576	-13.000	PEAK
3	* 639.483	0.150	-30.184	-30.034	-17.034	-13.000	PEAK
4	852.883	0.185	-36.260	-36.075	-23.075	-13.000	PEAK
5	959.583	0.205	-62.312	-62.107	-49.107	-13.000	PEAK

Note:

1. All Readings is peak measurements.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Engineer : Robin	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/10/25 - 09:31
Limit : FCC_Part27_WiMax_PK	Margin : 0
EUT : I600 WiMAX MODEM	Probe : - Line1
Power : AC 120V/60Hz	Note : Mode 1: 5MHz Bandwidth QPSK 2600MHz

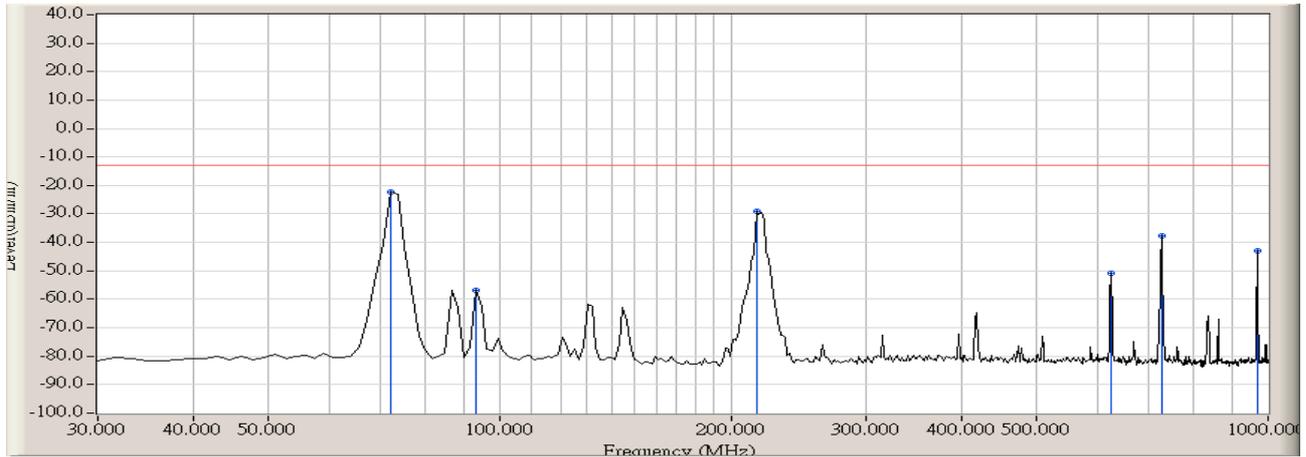


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1	*	7803.333	1.242	-22.013	-20.771	-7.771	-13.000	PEAK

Note:

1. All Readings is peak measurements.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Engineer : Robin	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/10/25 - 09:34
Limit : FCC_Part27_WiMax_PK	Margin : 0
EUT : I600 WiMAX MODEM	Probe : - Line1
Power : AC 120V/60Hz	Note : Mode 1: 5MHz Bandwidth QPSK 2687MHz

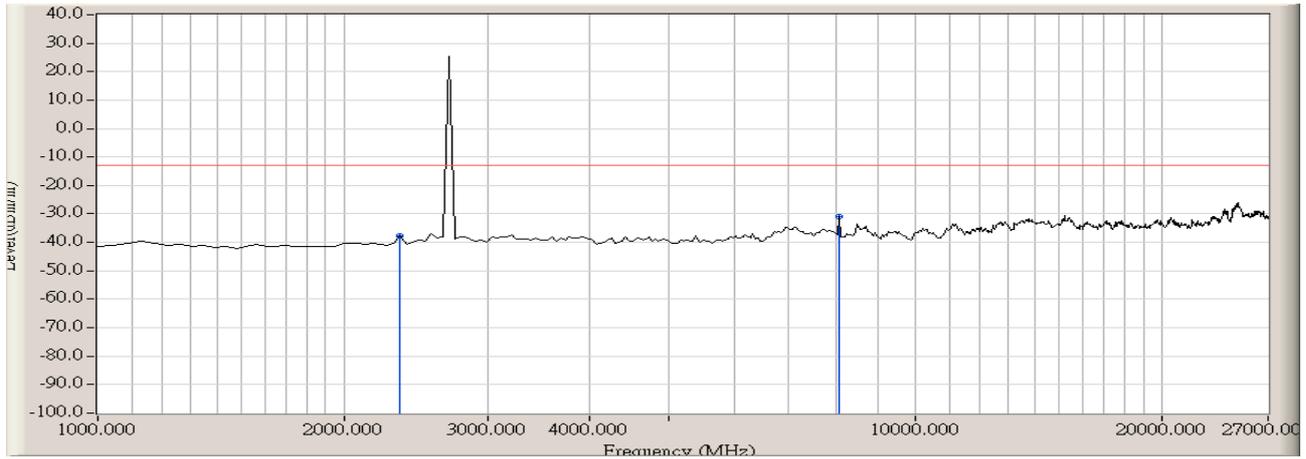


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1	*	72.033	0.056	-22.278	-22.222	-9.222	-13.000	PEAK
2		93.050	0.060	-57.027	-56.967	-43.967	-13.000	PEAK
3		215.917	0.080	-29.093	-29.013	-16.013	-13.000	PEAK
4		624.933	0.150	-50.834	-50.684	-37.684	-13.000	PEAK
5		726.783	0.168	-37.751	-37.583	-24.583	-13.000	PEAK
6		967.667	0.208	-43.077	-42.869	-29.869	-13.000	PEAK

Note:

1. All Readings is peak measurements.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Engineer : Robin	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/10/25 - 09:34
Limit : FCC_Part27_WiMax_PK	Margin : 0
EUT : I600 WiMAX MODEM	Probe : - Line1
Power : AC 120V/60Hz	Note : Mode 1: 5MHz Bandwidth QPSK 2687MHz

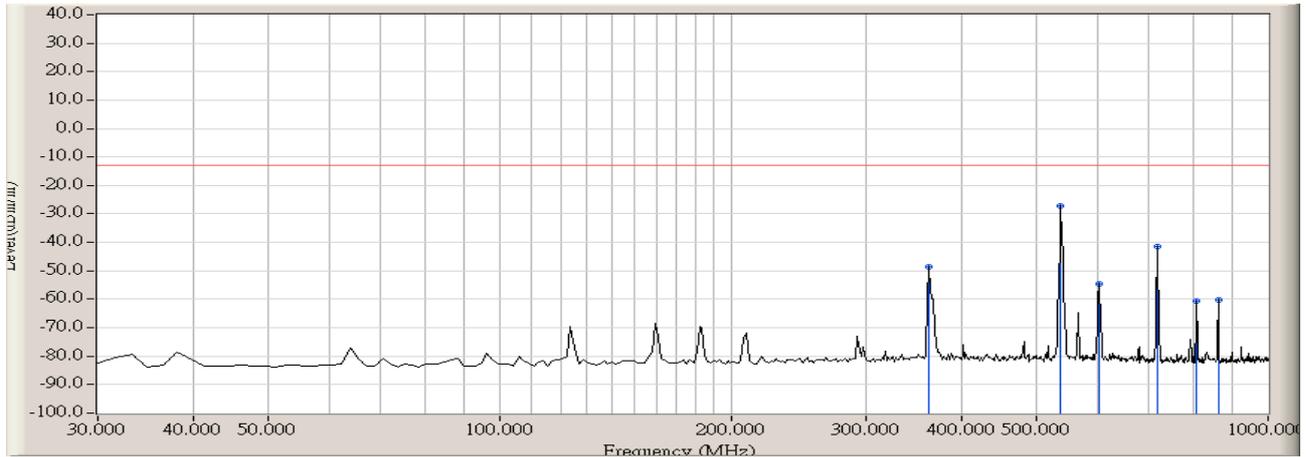


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1	2343.333	0.418	-38.040	-37.622	-24.622	-13.000	PEAK
2	* 8063.333	1.289	-32.111	-30.822	-17.822	-13.000	PEAK

Note:

1. All Readings is peak measurements.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Engineer : Robin	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/10/25 - 09:35
Limit : FCC_Part27_WiMax_PK	Margin : 0
EUT : I600 WiMAX MODEM	Probe : - Line1
Power : AC 120V/60Hz	Note : Mode 1: 5MHz Bandwidth 16QAM 2499MHz

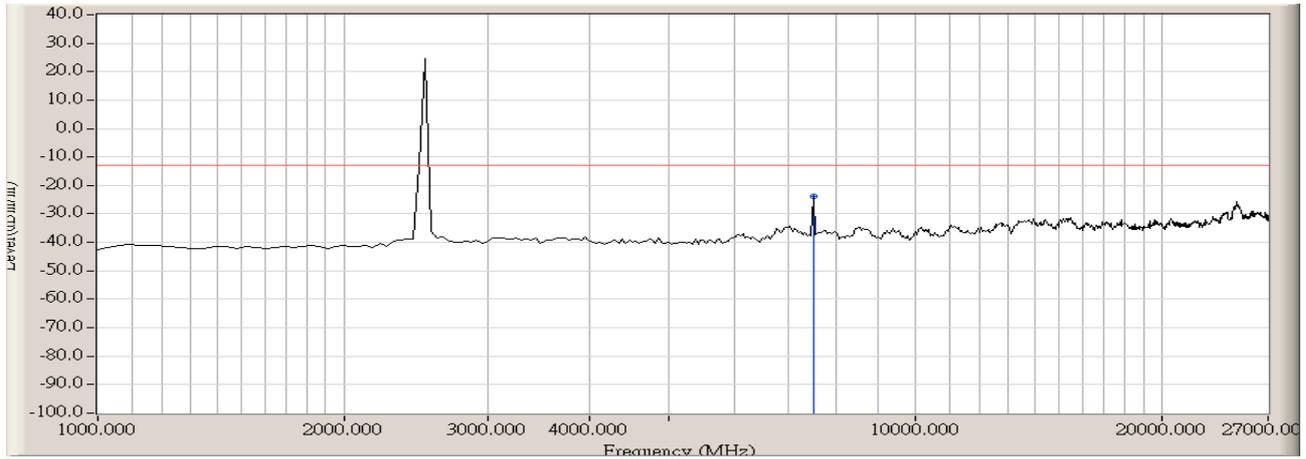


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1	361.417	0.103	-48.581	-48.478	-35.478	-13.000	PEAK
2	* 537.633	0.130	-27.438	-27.308	-14.308	-13.000	PEAK
3	603.917	0.143	-54.837	-54.694	-41.694	-13.000	PEAK
4	717.083	0.165	-41.674	-41.509	-28.509	-13.000	PEAK
5	807.617	0.178	-60.794	-60.616	-47.616	-13.000	PEAK
6	860.967	0.188	-60.430	-60.242	-47.242	-13.000	PEAK

Note:

1. All Readings is peak measurements.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Engineer : Robin	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/10/25 - 09:36
Limit : FCC_Part27_WiMax_PK	Margin : 0
EUT : I600 WiMAX MODEM	Probe : - Line1
Power : AC 120V/60Hz	Note : Mode 1: 5MHz Bandwidth 16QAM 2499MHz

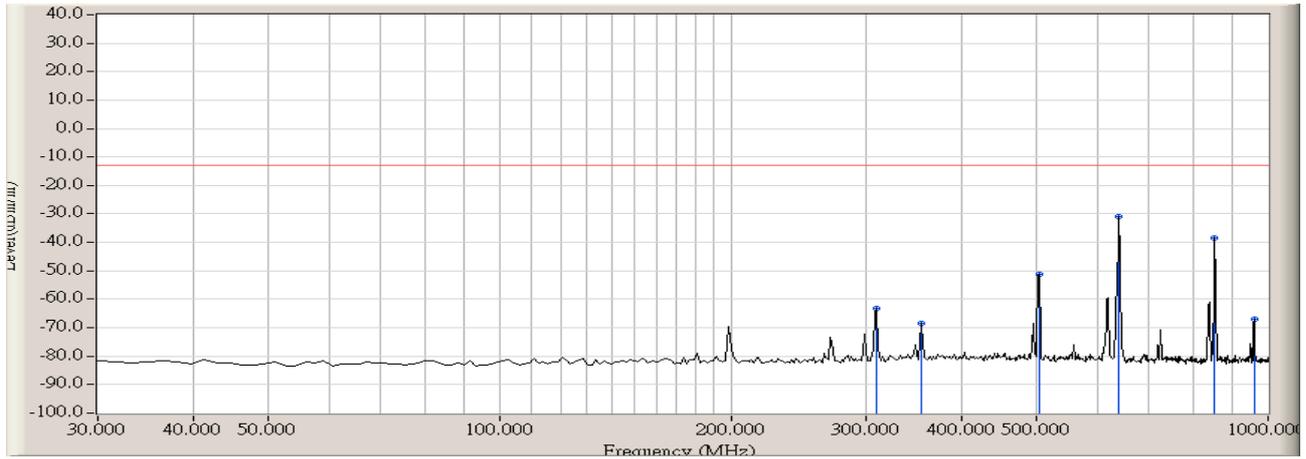


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1	*	7500.000	1.200	-25.170	-23.970	-10.970	-13.000	PEAK

Note:

1. All Readings is peak measurements.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Engineer : Robin	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/10/25 - 09:37
Limit : FCC_Part27_WiMax_PK	Margin : 0
EUT : I600 WiMAX MODEM	Probe : - Line1
Power : AC 120V/60Hz	Note : Mode 1: 5MHz Bandwidth 16QAM 2600MHz

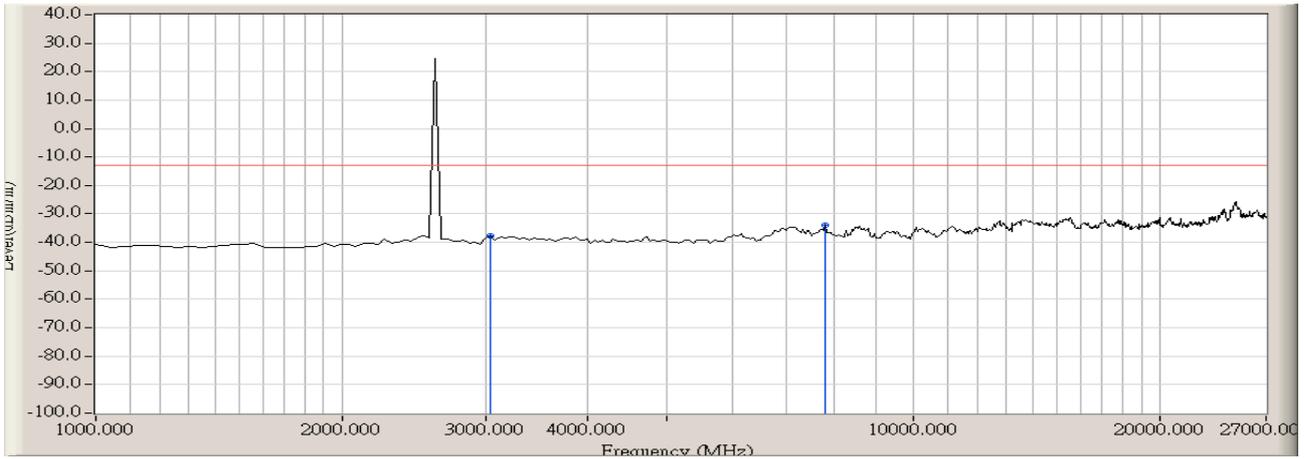


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1	309.683	0.094	-63.304	-63.210	-50.210	-13.000	PEAK
2	353.333	0.100	-68.487	-68.387	-55.387	-13.000	PEAK
3	503.683	0.130	-51.379	-51.249	-38.249	-13.000	PEAK
4	* 639.483	0.150	-30.929	-30.779	-17.779	-13.000	PEAK
5	852.883	0.185	-38.814	-38.629	-25.629	-13.000	PEAK
6	959.583	0.205	-67.312	-67.107	-54.107	-13.000	PEAK

Note:

1. All Readings is peak measurements.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Engineer : Robin	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/10/25 - 09:37
Limit : FCC_Part27_WiMax_PK	Margin : 0
EUT : I600 WiMAX MODEM	Probe : - Line1
Power : AC 120V/60Hz	Note : Mode 1: 5MHz Bandwidth 16QAM 2600MHz

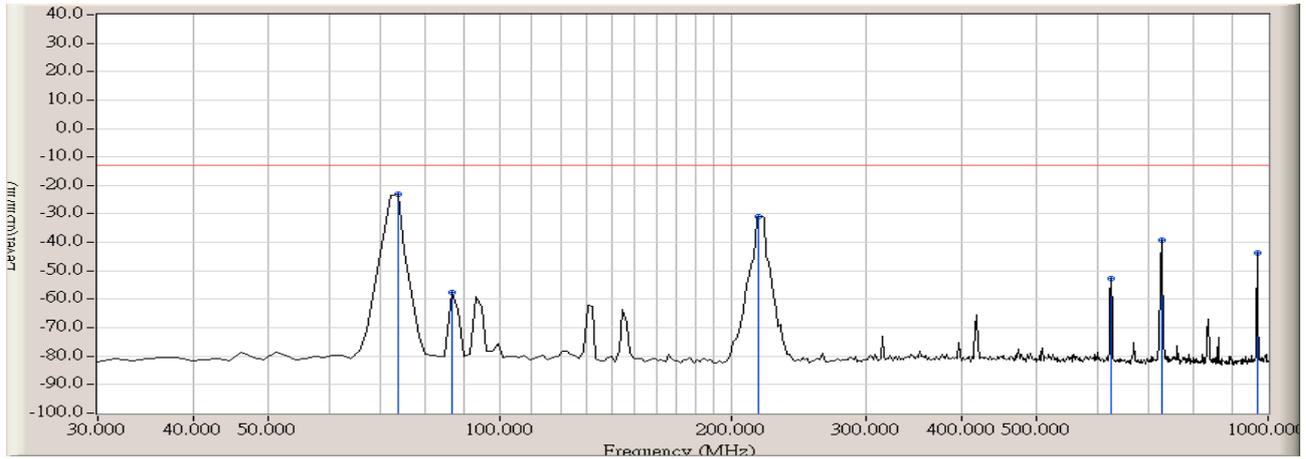


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1		3036.667	0.520	-38.323	-37.803	-24.803	-13.000	PEAK
2	*	7803.333	1.242	-35.326	-34.084	-21.084	-13.000	PEAK

Note:

1. All Readings is peak measurements.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Engineer : Robin	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/10/25 - 09:38
Limit : FCC_Part27_WiMax_PK	Margin : 0
EUT : I600 WiMAX MODEM	Probe : - Line1
Power : AC 120V/60Hz	Note : Mode 1: 5MHz Bandwidth 16QAM 2687MHz

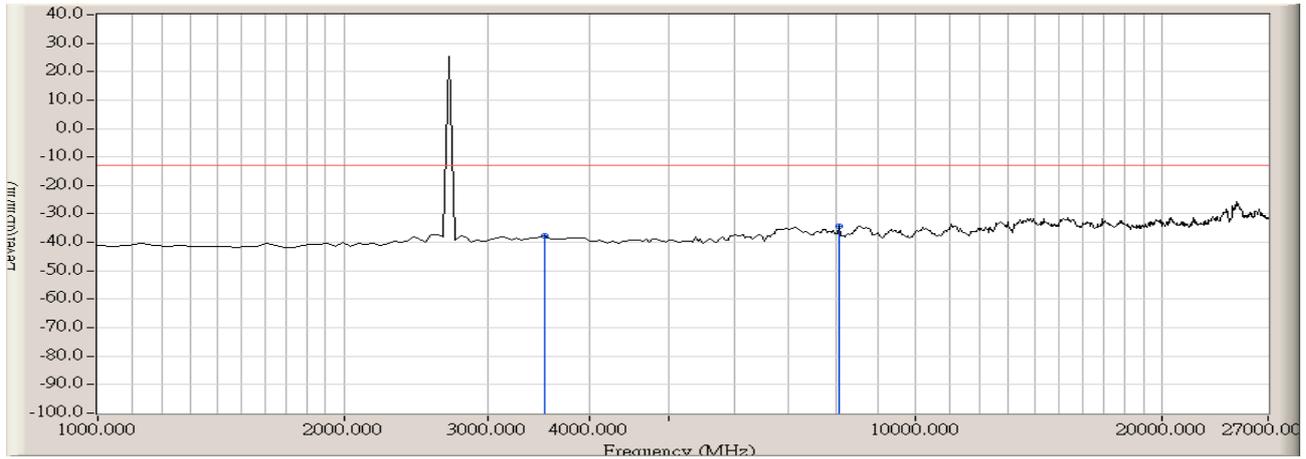


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1	*	73.650	0.056	-23.275	-23.219	-10.219	-13.000	PEAK
2		86.583	0.060	-57.540	-57.480	-44.480	-13.000	PEAK
3		217.533	0.080	-30.889	-30.809	-17.809	-13.000	PEAK
4		624.933	0.150	-52.918	-52.768	-39.768	-13.000	PEAK
5		726.783	0.168	-39.340	-39.172	-26.172	-13.000	PEAK
6		967.667	0.208	-43.989	-43.781	-30.781	-13.000	PEAK

Note:

1. All Readings is peak measurements.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Engineer : Robin	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/10/25 - 09:39
Limit : FCC_Part27_WiMax_PK	Margin : 0
EUT : I600 WiMAX MODEM	Probe : - Line1
Power : AC 120V/60Hz	Note : Mode 1: 5MHz Bandwidth 16QAM 2687MHz

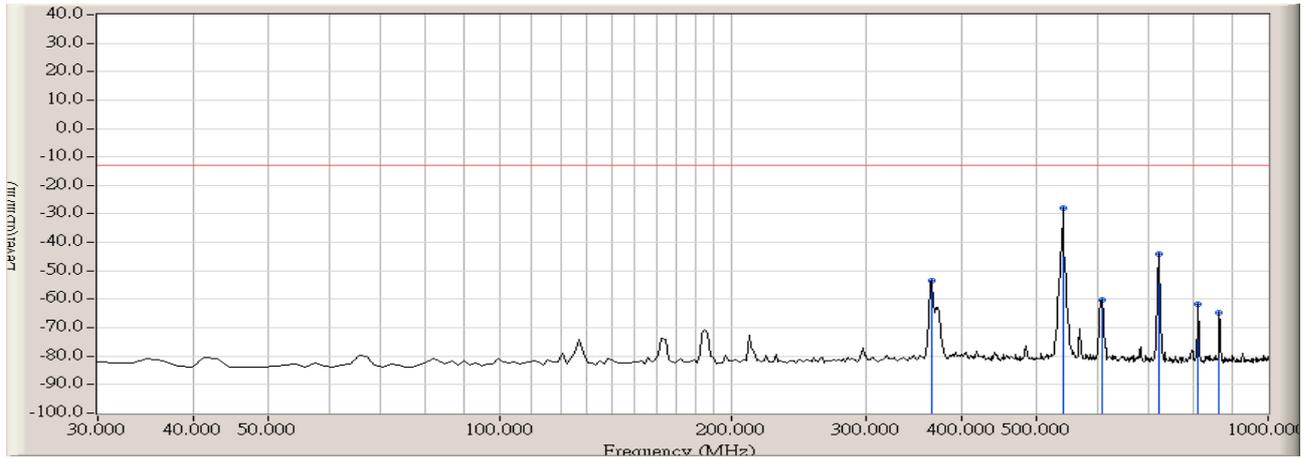


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1		3513.333	0.592	-38.305	-37.713	-24.713	-13.000	PEAK
2	*	8063.333	1.289	-35.598	-34.309	-21.309	-13.000	PEAK

Note:

1. All Readings is peak measurements.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Engineer : Robin	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/10/25 - 09:40
Limit : FCC_Part27_WiMax_PK	Margin : 0
EUT : I600 WiMAX MODEM	Probe : - Line1
Power : AC 120V/60Hz	Note : Mode 2: 10MHz Bandwidth QPSK 2501MHz

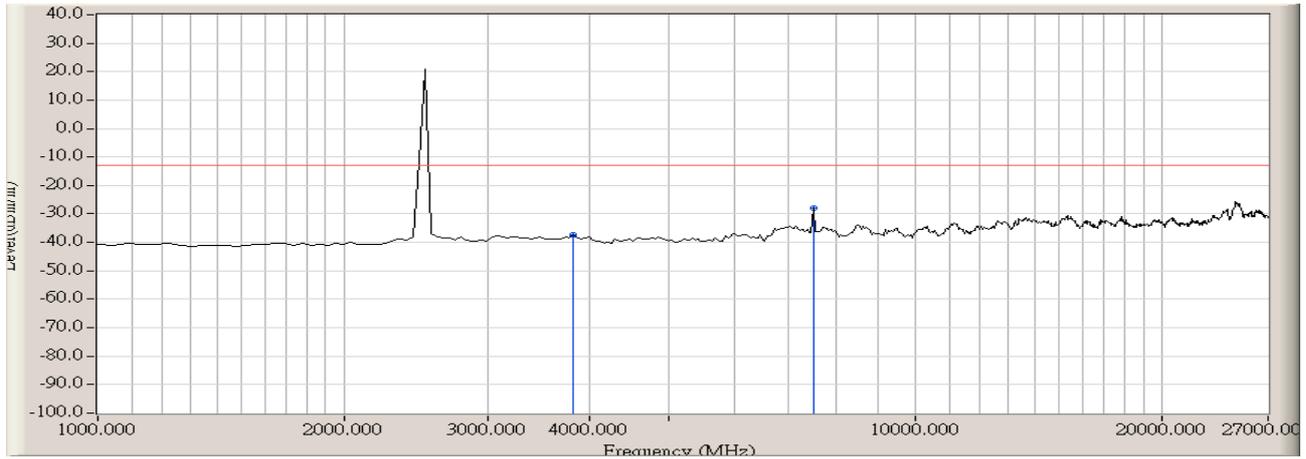


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1	364.650	0.104	-53.529	-53.425	-40.425	-13.000	PEAK
2	* 540.867	0.130	-28.246	-28.116	-15.116	-13.000	PEAK
3	607.150	0.144	-60.360	-60.216	-47.216	-13.000	PEAK
4	720.317	0.166	-44.350	-44.184	-31.184	-13.000	PEAK
5	810.850	0.180	-62.051	-61.871	-48.871	-13.000	PEAK
6	864.200	0.189	-64.986	-64.797	-51.797	-13.000	PEAK

Note:

1. All Readings is peak measurements.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Engineer : Robin	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/10/25 - 09:41
Limit : FCC_Part27_WiMax_PK	Margin : 0
EUT : I600 WiMAX MODEM	Probe : - Line1
Power : AC 120V/60Hz	Note : Mode 2: 10MHz Bandwidth QPSK 2501MHz

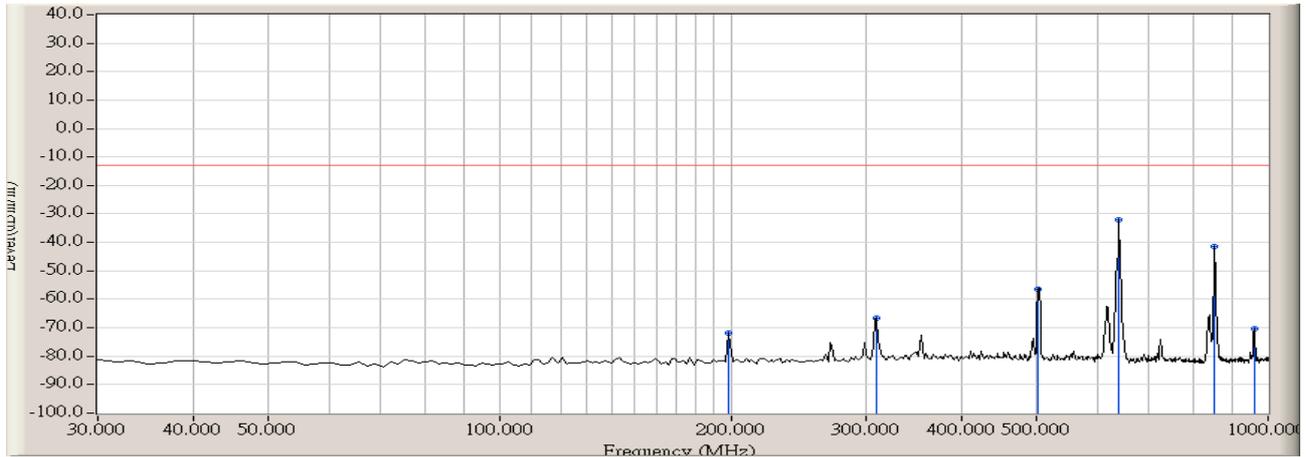


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1	3816.667	0.640	-37.952	-37.312	-24.312	-13.000	PEAK
2	* 7500.000	1.200	-29.117	-27.917	-14.917	-13.000	PEAK

Note:

1. All Readings is peak measurements.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Engineer : Robin	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/10/25 - 09:42
Limit : FCC_Part27_WiMax_PK	Margin : 0
EUT : I600 WiMAX MODEM	Probe : - Line1
Power : AC 120V/60Hz	Note : Mode 2: 10MHz Bandwidth QPSK 2600MHz

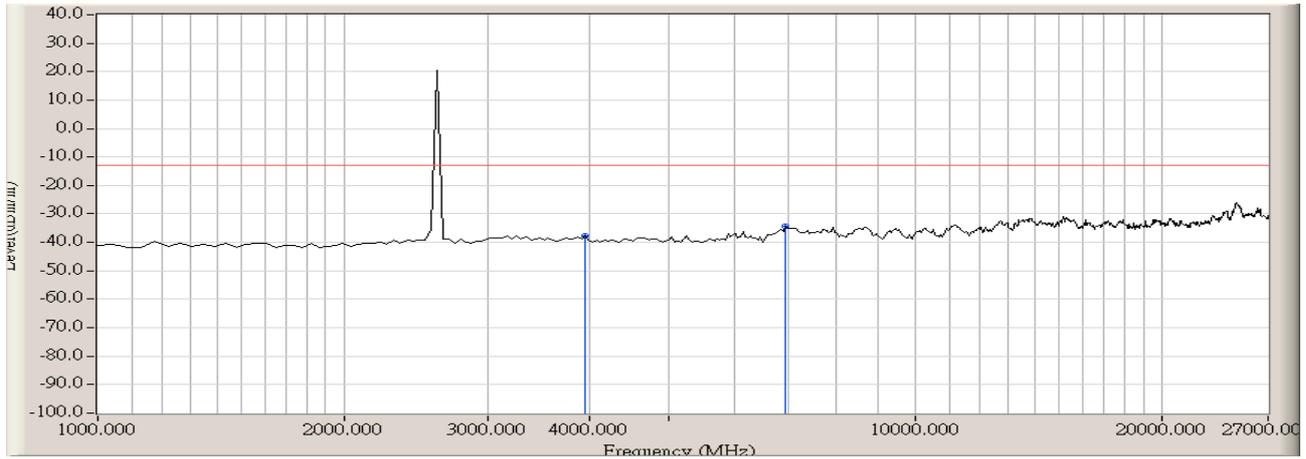


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1	198.133	0.080	-72.046	-71.966	-58.966	-13.000	PEAK
2	309.683	0.094	-66.625	-66.531	-53.531	-13.000	PEAK
3	502.067	0.130	-56.446	-56.316	-43.316	-13.000	PEAK
4	* 639.483	0.150	-32.341	-32.191	-19.191	-13.000	PEAK
5	852.883	0.185	-41.614	-41.429	-28.429	-13.000	PEAK
6	959.583	0.205	-70.477	-70.272	-57.272	-13.000	PEAK

Note:

1. All Readings is peak measurements.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Engineer : Robin	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/10/25 - 09:43
Limit : FCC_Part27_WiMax_PK	Margin : 0
EUT : I600 WiMAX MODEM	Probe : - Line1
Power : AC 120V/60Hz	Note : Mode 2: 10MHz Bandwidth QPSK 2600MHz

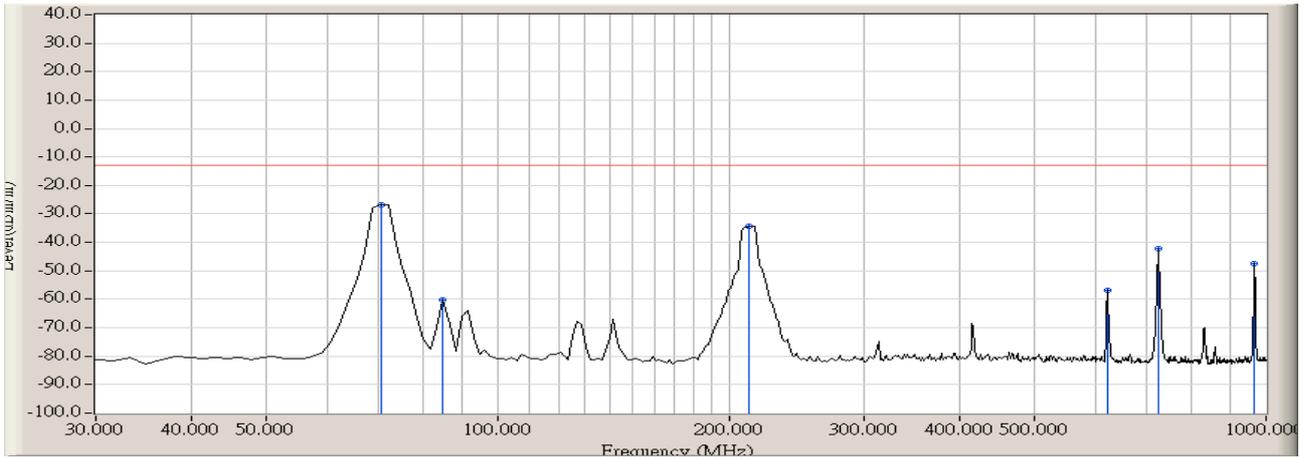


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1	3946.667	0.660	-38.529	-37.869	-24.869	-13.000	PEAK
2*	6936.667	1.111	-35.364	-34.253	-21.253	-13.000	PEAK

Note:

1. All Readings is peak measurements.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Engineer : Robin	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/10/25 - 09:47
Limit : FCC_Part27_WiMax_PK	Margin : 0
EUT : I600 WiMAX MODEM	Probe : - Line1
Power : AC 120V/60Hz	Note : Mode 2: 10MHz Bandwidth QPSK 2685MHz

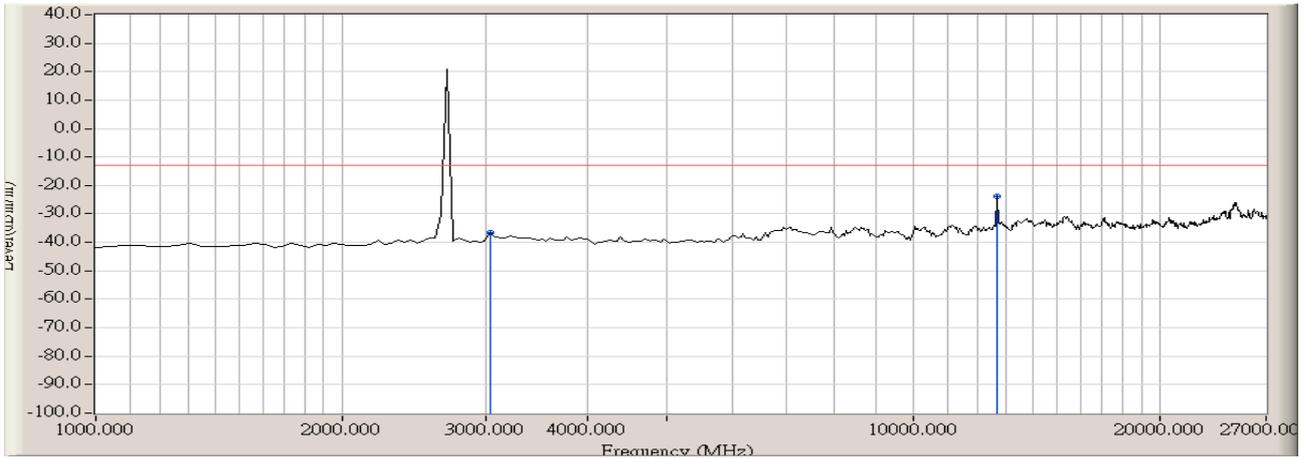


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1	*	70.417	0.055	-26.729	-26.674	-13.674	-13.000	PEAK
2		84.967	0.060	-60.089	-60.029	-47.029	-13.000	PEAK
3		212.683	0.080	-34.289	-34.209	-21.209	-13.000	PEAK
4		621.700	0.149	-57.122	-56.973	-43.973	-13.000	PEAK
5		723.550	0.167	-42.416	-42.249	-29.249	-13.000	PEAK
6		966.050	0.207	-47.749	-47.542	-34.542	-13.000	PEAK

Note:

1. All Readings is peak measurements.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Engineer : Robin	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/10/25 - 09:47
Limit : FCC_Part27_WiMax_PK	Margin : 0
EUT : I600 WiMAX MODEM	Probe : - Line1
Power : AC 120V/60Hz	Note : Mode 2: 10MHz Bandwidth QPSK 2685MHz

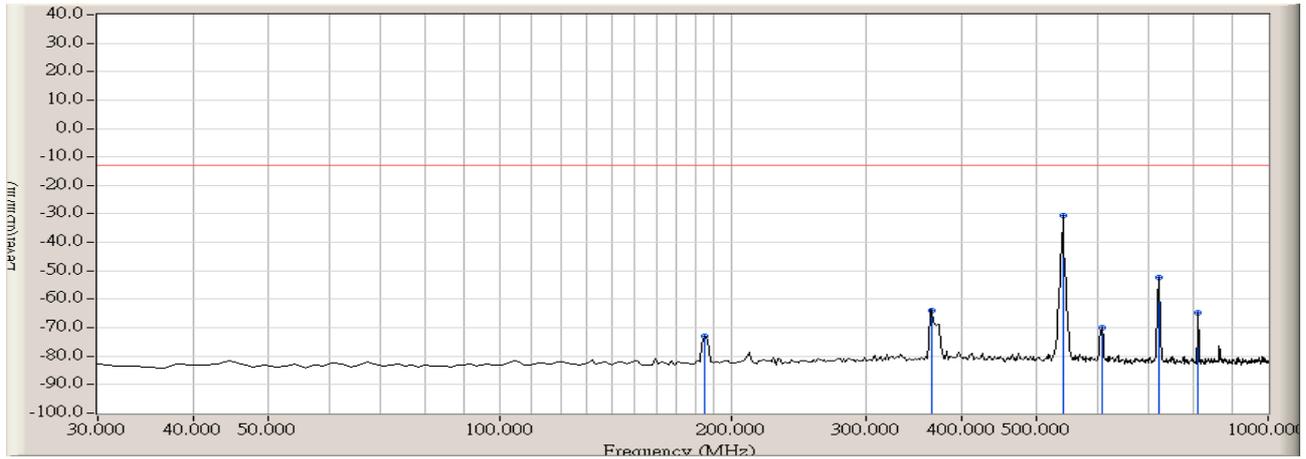


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1		3036.667	0.520	-36.924	-36.404	-23.404	-13.000	PEAK
2	*	12656.667	1.820	-25.629	-23.809	-10.809	-13.000	PEAK

Note:

1. All Readings is peak measurements.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Engineer : Robin	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/10/25 - 09:48
Limit : FCC_Part27_WiMax_PK	Margin : 0
EUT : I600 WiMAX MODEM	Probe : - Line1
Power : AC 120V/60Hz	Note : Mode 2: 10MHz Bandwidth 16QAM 2501MHz

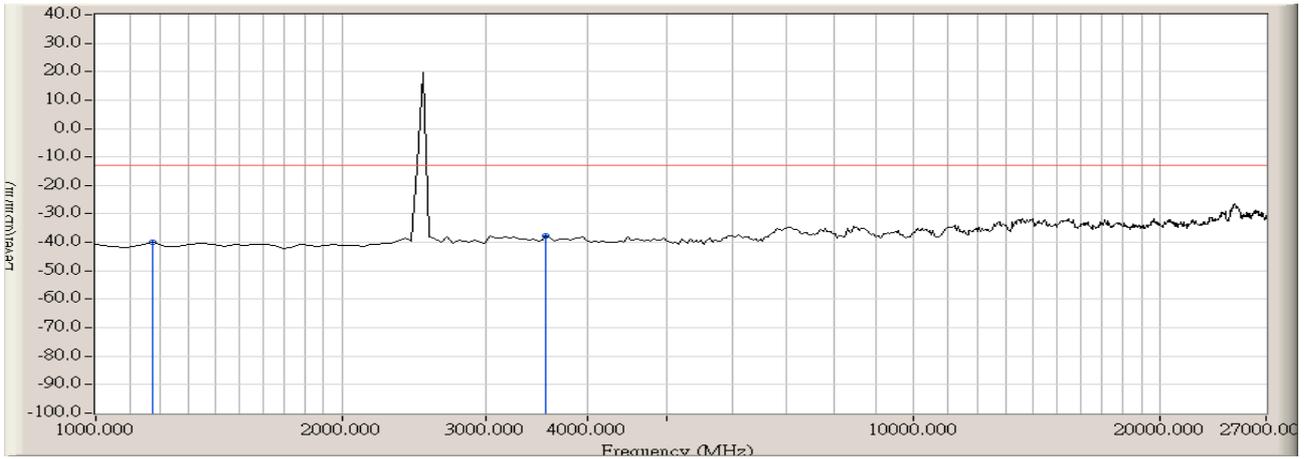


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1	185.200	0.078	-72.935	-72.857	-59.857	-13.000	PEAK
2	364.650	0.104	-64.005	-63.901	-50.901	-13.000	PEAK
3	* 540.867	0.130	-30.858	-30.728	-17.728	-13.000	PEAK
4	608.767	0.145	-69.973	-69.828	-56.828	-13.000	PEAK
5	720.317	0.166	-52.608	-52.442	-39.442	-13.000	PEAK
6	810.850	0.180	-64.977	-64.797	-51.797	-13.000	PEAK

Note:

1. All Readings is peak measurements.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Engineer : Robin	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/10/25 - 09:49
Limit : FCC_Part27_WiMax_PK	Margin : 0
EUT : I600 WiMAX MODEM	Probe : - Line1
Power : AC 120V/60Hz	Note : Mode 2: 10MHz Bandwidth 16QAM 2501MHz

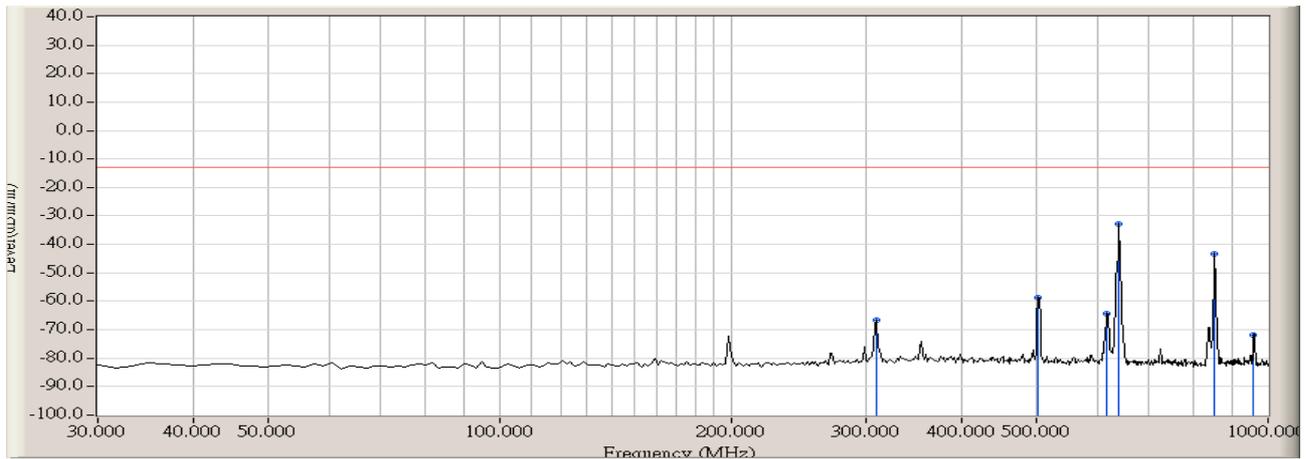


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1		1173.333	0.234	-40.354	-40.120	-27.120	-13.000	PEAK
2	*	3556.667	0.600	-38.183	-37.583	-24.583	-13.000	PEAK

Note:

1. All Readings is peak measurements.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Engineer : Robin	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/10/25 - 09:50
Limit : FCC_Part27_WiMax_PK	Margin : 0
EUT : I600 WiMAX MODEM	Probe : - Line1
Power : AC 120V/60Hz	Note : Mode 2: 10MHz Bandwidth 16QAM 2600MHz

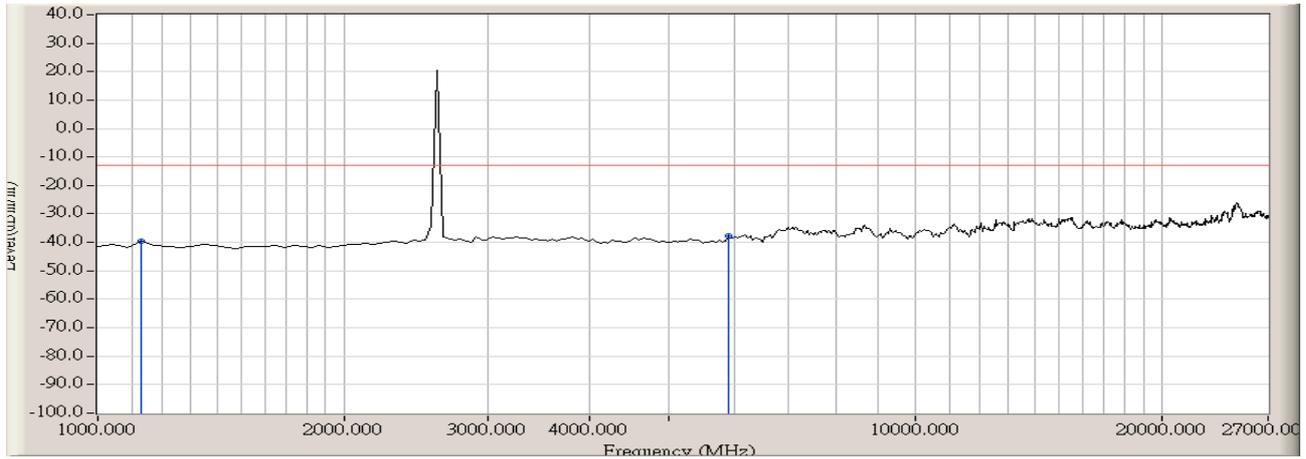


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1	309.683	0.094	-66.551	-66.457	-53.457	-13.000	PEAK
2	502.067	0.130	-58.940	-58.810	-45.810	-13.000	PEAK
3	616.850	0.148	-64.646	-64.498	-51.498	-13.000	PEAK
4	* 639.483	0.150	-33.040	-32.890	-19.890	-13.000	PEAK
5	852.883	0.185	-43.334	-43.149	-30.149	-13.000	PEAK
6	957.967	0.204	-71.902	-71.698	-58.698	-13.000	PEAK

Note:

1. All Readings is peak measurements.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Engineer : Robin	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/10/25 - 09:50
Limit : FCC_Part27_WiMax_PK	Margin : 0
EUT : I600 WiMAX MODEM	Probe : - Line1
Power : AC 120V/60Hz	Note : Mode 2: 10MHz Bandwidth 16QAM 2600MHz

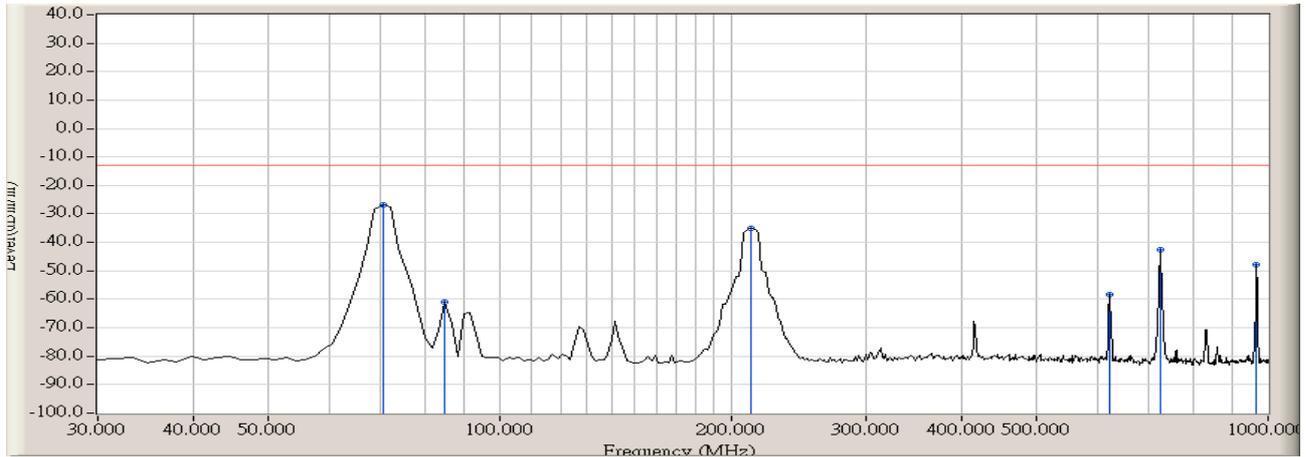


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1	1130.000	0.230	-39.854	-39.624	-26.624	-13.000	PEAK
2	* 5896.667	0.955	-38.646	-37.691	-24.691	-13.000	PEAK

Note:

1. All Readings is peak measurements.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Engineer : Robin	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/10/25 - 09:51
Limit : FCC_Part27_WiMax_PK	Margin : 0
EUT : I600 WiMAX MODEM	Probe : - Line1
Power : AC 120V/60Hz	Note : Mode 2: 10MHz Bandwidth 16QAM 2685MHz

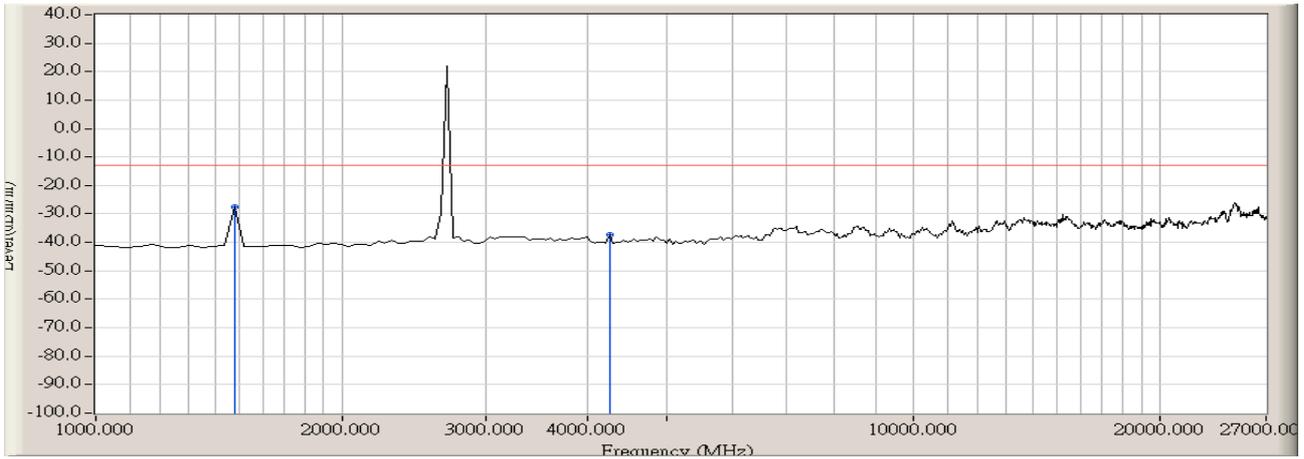


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1	*	70.417	0.055	-26.937	-26.882	-13.882	-13.000	PEAK
2		84.967	0.060	-61.192	-61.132	-48.132	-13.000	PEAK
3		212.683	0.080	-35.003	-34.923	-21.923	-13.000	PEAK
4		621.700	0.149	-58.547	-58.398	-45.398	-13.000	PEAK
5		723.550	0.167	-42.653	-42.486	-29.486	-13.000	PEAK
6		966.050	0.207	-48.179	-47.972	-34.972	-13.000	PEAK

Note:

1. All Readings is peak measurements.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Engineer : Robin	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/10/25 - 09:51
Limit : FCC_Part27_WiMax_PK	Margin : 0
EUT : I600 WiMAX MODEM	Probe : - Line1
Power : AC 120V/60Hz	Note : Mode 2: 10MHz Bandwidth 16QAM 2685MHz



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type
1	*	1476.667	0.280	-27.921	-27.641	-14.641	-13.000	PEAK
2		4250.000	0.705	-37.934	-37.229	-24.229	-13.000	PEAK

Note:

1. All Readings is peak measurements.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

7. Field Strength of Spurious Radiation

7.1. Test Equipment

Field Strength of Spurious Radiation / AC-2

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	E4408B	MY45102679	2008/06/28
PSG Analog S.G.	Agilent	E8257D	MY44321116	2008/06/11
Preamplifier	Quietek	AP-025C	QT-AP003	2007/11/25
Preamplifier	Quietek	AP-180C	CHM-0602012	2007/11/25
Half Wave Tuned Dipole Antenna	COM-POWER	AD-100	40137	2007/11/25
Bilog Type Antenna	Schaffner	CBL6112B	2932	2007/11/22
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	496	2008/06/28
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	499	2008/06/28
Coaxial Cable	Huber+Suhner	AC2-C	04	2007/11/25
Coaxial Cable	Huber+Suhner	AC4-T	08	2007/11/25
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH002	2008/03/31

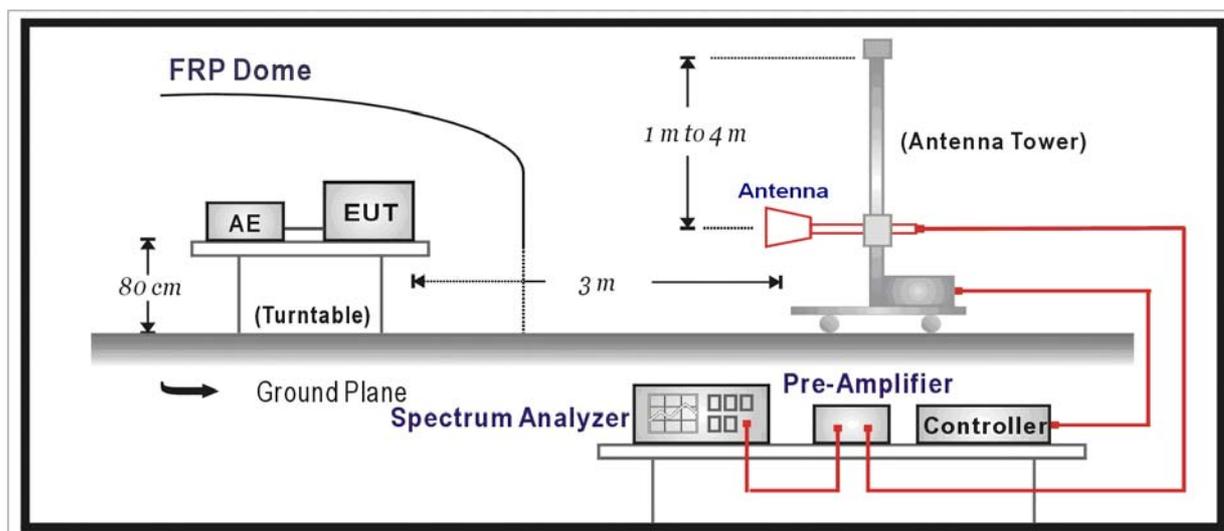
Field Strength of Spurious Radiation / AC-3

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	N9010A	MY48030494	2008/04/24
PSG Analog S.G.	Agilent	E8257D	MY44321116	2008/06/11
Preamplifier	Quietek	AP-025C	QT-AP004	2007/11/25
Preamplifier	Quietek	AP-180C	CHM-0602012	2007/11/25
Half Wave Tuned Dipole Antenna	COM-POWER	AD-100	40137	2007/11/25
Bilog Type Antenna	Schaffner	CBL6112D	22254	2007/11/22
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	496	2008/06/28
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	499	2008/06/28
Coaxial Cable	Huber+Suhner	AC3-C	05	2007/11/25
Coaxial Cable	Huber+Suhner	AC4-T	08	2007/11/25
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH003	2008/03/31

Note 1: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

Note 2: The test instruments marked with "X" are used to measure the final test results.

7.2. Test Setup



7.3. Limit

For mobile digital stations, the attenuation factor shall be not less than $43 + 10\log(P)$ dB

7.4. Test Procedure

- (a) Adjust the spectrum analyzer for the following setting:
 - RBW = 100 kHz for spurious emissions below 1GHz, and 1MHz for spurious emissions above 1GHz.
 - VBW = 300 kHz for spurious emissions below 1 GHz, and 3 MHz for spurious emissions above 1 GHz.
 - Sweep speed slow enough to maintain measurement calibration.
 - Detector mode = Positive Peak.
- (b) Place the transmitter to be tested on the turntable in the standard semi-Anechoic chamber.
- (c) Measurements shall be made from the lowest radio frequency generated in the equipment to the tenth harmonic of the carrier, except for the region close to the carrier equal to \pm the test bandwidth.
- (d) Key the transmitter.
- (e) For each spurious frequency, raise and lower the test antenna from 1 m to 4 m to obtain a maximum reading on the spectrum analyzer with the test antenna at horizontal polarity. Then the turntable should be rotated 360° to highest possible reading. Record this maximum reading.
- (f) Repeat step (e) for each spurious frequency with the test antenna polarized vertically.
- (g) Remove the transmitter and replace it with a substitution antenna (the antenna should be half-wavelength for each frequency involved). The center of the substitution antenna should be approximately at the same location as the center of the transmitter. At the lower frequencies, where the substitution antenna is very long, this will be impossible to achieve when the antenna is polarized vertically. In such case the lower end of the antenna should be 0.3 m above the ground.
- (h) Feed the substitution antenna at the transmitter end with a signal generator connected to the antenna by means of a non radiating cable. With the antennas at both ends horizontally polarized and with the signal generator tuned to a particular spurious frequency, raise and lower the test antenna to obtain a maximum reading at the spectrum analyzer. Adjust the level of the signal generator output until the previously recorded maximum reading for this set of conditions is obtained. This should be done carefully repeating the adjustment of the test antenna and generator output.
- (i) Repeat step (h) with both antennas vertically polarized for each spurious frequency.
- (j) Calculate power in dBm into a reference ideal half-wave dipole antenna by reducing the readings obtained in (h) and (i) by the power loss in the cable between the generator and

the antenna, and further corrected for the gain of the substitution antenna used relative to an ideal half-wave dipole antenna by the following formula:

$$P_d(\text{dBm}) = P_g(\text{dBm}) - \text{cable loss (dB)} + \text{antenna gain (dB)}$$

Where:

P_d is the dipole equivalent power and

P_g is the generator output power into the substitution antenna.

7.5. Uncertainty

The measurement uncertainty above 1GHz is defined as ± 3.9 dB

below 1GHz is defined as ± 3.8 dB

7.6. Test Result

Product	:	I600 WiMAX MODEM
Test Item	:	Field Strength of Spurious Radiation
Test Site	:	AC-4
Test Mode	:	Mode 1: Transmit (5MHz Bandwidth)

Below 1GHz								
Frequency (MHz)	SA Reading (dBm)	Ant.Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Low Channel (2499MHz)								
104.36	-51.56	V	-61.83	0.06	7.90	-53.99	-13	-40.99
249.80	-55.68	V	-71.73	0.09	16.20	-55.62	-13	-42.62
537.60	-68.23	V	-85.04	0.13	22.60	-62.57	-13	-49.57
104.36	-54.42	H	-65.53	0.06	7.90	-57.69	-13	-44.69
199.75	-59.33	H	-76.21	0.08	14.60	-61.68	-13	-48.68
249.86	-55.03	H	-69.01	0.09	16.20	-52.90	-13	-39.90
Middle Channel (2600MHz)								
104.36	-51.43	V	-61.69	0.06	7.90	-53.85	-13	-40.85
249.86	-55.82	V	-71.88	0.09	16.20	-55.76	-13	-42.76
384.05	-70.37	V	-82.71	0.10	19.30	-63.51	-13	-50.51
104.36	-54.76	H	-65.87	0.06	7.90	-58.02	-13	-45.02
175.50	-61.28	H	-74.91	0.07	12.80	-62.18	-13	-49.18
249.86	-55.15	H	-69.12	0.09	16.20	-53.01	-13	-40.01
High Channel (2687MHz)								
104.36	-51.540	V	-61.80	0.06	7.90	-53.96	-13	-40.96
249.86	-55.761	V	-71.81	0.09	16.20	-55.69	-13	-42.69
384.05	-69.993	V	-82.32	0.11	19.30	-63.13	-13	-50.13
104.36	-55.399	H	-66.50	0.06	7.90	-58.66	-13	-45.66
199.70	-59.637	H	-76.51	0.08	14.60	-61.98	-13	-48.98
249.80	-55.095	H	-69.07	0.09	16.20	-52.95	-13	-39.95

Above 1GHz								
Frequency (MHz)	SA Reading (dBm)	Ant.Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Low Channel (2499MHz)								
2870.00	-61.45	V	-79.22	0.48	27.96	-51.74	-13	-38.74
3323.30	-64.22	V	-81.42	0.55	27.82	-54.14	-13	-41.15
7176.60	-67.89	V	-80.90	1.19	36.25	-45.84	-13	-32.84
2785.00	-64.84	H	-82.91	0.46	27.85	-55.52	-13	-42.52
3918.30	-67.01	H	-83.64	0.67	29.35	-54.95	-13	-41.95
5646.60	-67.51	H	-82.50	0.90	32.04	-51.35	-13	-38.35
Middle Channel (2600MHz)								
2898.30	-60.26	V	-78.12	0.49	28.02	-50.59	-13	-37.59
4796.60	-66.81	V	-82.14	0.81	31.26	-51.69	-13	-38.69
5193.30	-64.47	V	-79.54	0.84	31.65	-48.73	-13	-35.73
3210.00	-66.18	H	-83.14	0.54	28.18	-55.49	-13	-42.49
4768.30	-67.34	H	-82.74	0.80	31.22	-52.32	-13	-39.32
5646.60	-68.02	H	-83.01	0.90	32.04	-51.87	-13	-38.87
High Channel (2687MHz)								
3210.00	-54.61	V	-71.33	0.54	28.18	-43.69	-13	-30.69
4286.60	-55.95	V	-72.15	0.71	30.07	-42.78	-13	-29.78
5363.30	-48.35	V	-63.79	0.86	31.71	-32.93	-13	-19.93
2190.00	-65.59	H	-84.20	0.39	27.80	-56.79	-13	-43.79
4088.30	-66.74	H	-83.37	0.68	29.75	-54.30	-13	-41.30
5731.60	-67.02	H	-81.70	1.10	32.29	-50.50	-13	-37.50

Product	:	I600 WiMAX MODEM
Test Item	:	Field Strength of Spurious Radiation
Test Site	:	AC-4
Test Mode	:	Mode 2: Transmit (10MHz Bandwidth)

Below 1GHz								
Frequency (MHz)	SA Reading (dBm)	Ant.Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Low Channel (2501MHz)								
104.36	-51.72	V	-61.99	0.06	7.90	-54.14	-13	-41.14
175.50	-64.27	V	-76.17	0.07	12.80	-63.43	-13	-50.43
249.86	-56.20	V	-72.31	0.09	16.20	-56.19	-13	-43.19
104.36	-54.31	H	-65.42	0.06	7.90	-57.58	-13	-44.58
175.50	-61.53	H	-75.16	0.07	12.80	-62.42	-13	-49.42
249.86	-55.20	H	-69.18	0.09	16.20	-53.06	-13	-40.06
Middle Channel (2600MHz)								
104.36	-51.77	V	-62.04	0.06	7.90	-54.19	-13	-41.19
249.86	-56.04	V	-72.09	0.09	16.20	-55.98	-13	-42.98
384.05	-69.89	V	-82.14	0.11	19.30	-62.94	-13	-49.94
104.36	-54.92	H	-66.03	0.06	7.90	-58.19	-13	-45.19
199.75	-59.63	H	-76.50	0.08	14.60	-61.98	-13	-48.98
249.86	-55.53	H	-69.51	0.09	16.20	-53.39	-13	-40.39
High Channel (2685MHz)								
104.36	-51.70	V	-61.97	0.06	7.90	-54.12	-13	-41.12
175.50	-64.37	V	-76.26	0.07	12.80	-63.53	-13	-50.53
249.86	-56.18	V	-72.23	0.09	16.20	-56.12	-13	-43.12
104.36	-54.77	H	-65.88	0.06	7.90	-58.04	-13	-45.04
175.50	-61.47	H	-75.10	0.07	12.80	-62.36	-13	-49.36
249.87	-55.32	H	-69.30	0.09	16.20	-53.18	-13	-40.18

Above 1GHz								
Frequency (MHz)	SA Reading (dBm)	Ant.Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Low Channel (2501MHz)								
2926.66	-61.57	V	-79.64	0.49	28.09	-52.04	-13	-39.04
3323.30	-64.68	V	-81.87	0.55	27.82	-54.60	-13	-41.60
4768.30	-68.07	V	-83.53	0.80	31.22	-53.10	-13	-40.10
2190.00	-66.32	H	-84.94	0.39	27.80	-57.52	-13	-44.52
3776.66	-66.61	H	-83.24	0.62	28.93	-54.93	-13	-41.93
4740.00	-67.38	H	-82.90	0.79	31.18	-52.51	-13	-39.51
Middle Channel (2600MHz)								
2898.30	-61.58	V	-79.45	0.49	28.02	-51.91	-13	-38.91
4201.60	-66.77	V	-83.29	0.70	29.94	-54.04	-13	-41.04
5193.30	-65.72	V	-80.79	0.84	31.65	-49.97	-13	-36.97
2190.00	-65.52	H	-84.14	0.39	27.80	-56.72	-13	-43.72
3946.66	-66.41	H	-83.26	0.68	29.47	-54.46	-13	-41.46
4513.30	-67.35	H	-83.37	0.74	30.62	-53.49	-13	-40.49
High Channel (2685MHz)								
3181.60	-54.06	V	-71.16	0.53	28.26	-43.42	-13	-30.42
3833.30	-54.81	V	-71.47	0.65	29.12	-43.00	-13	-30.00
5363.30	-51.56	V	-67.22	0.63	31.71	-36.14	-13	-23.14
2218.30	-65.84	H	-84.65	0.39	27.82	-57.22	-13	-44.22
4258.30	-66.77	H	-82.91	0.71	30.06	-53.56	-13	-40.56
7063.30	-67.40	H	-79.81	1.16	35.46	-45.51	-13	-32.51

8. Frequency stability

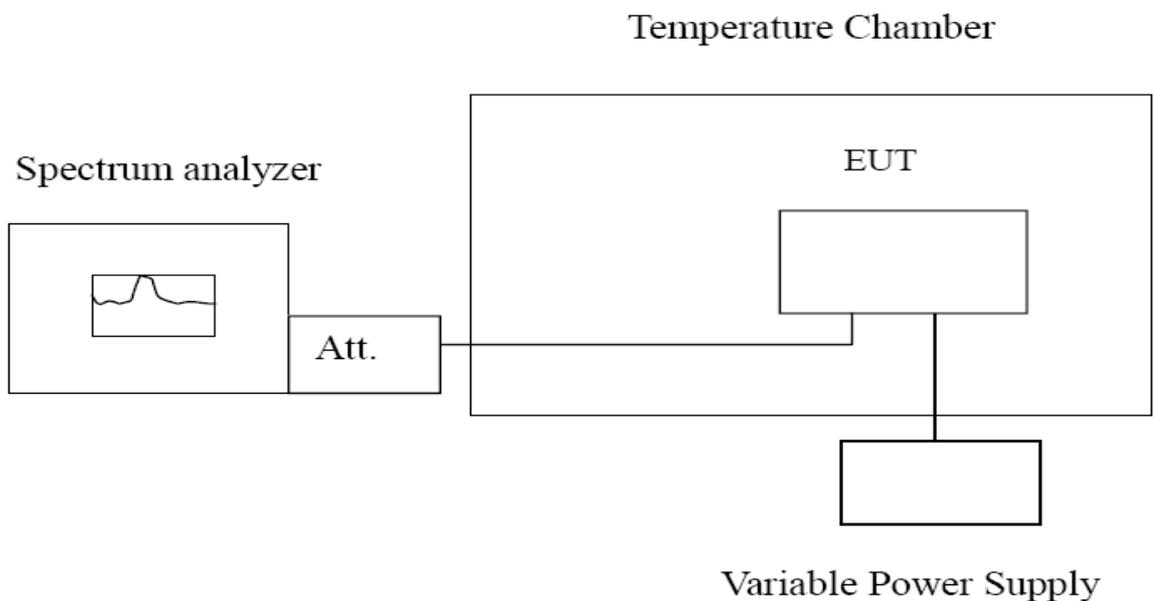
8.1. Test Equipment

Frequency stability / AC-4

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2008/06/11
AC Power Supply	IDRC	CF-500TP	979422	2008/10/26
DC Power Supply	IDRC	CD-035-020PR	977272	2008/10/26
Programmable Temperature & Humidity Chamber	Gaoyu	TH-1P-B	WIT-05121302	2008/01/19
Coaxial Cable	Huber+Suhner	AC4-RF	09	2007/11/25
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH007	2008/03/09

Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

8.2. Test Setup



8.3. Limit

The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation

8.4. Test Procedure

Frequency Stability Under Temperature Variations:

The equipment under test was connected to an external AC or DC power supply and input rated voltage. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. The EUT was placed inside the temperature chamber. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 20°C operating frequency as reference frequency. Turn EUT off and set the chamber temperature to -30°C. After the temperature stabilized for approximately 30 minutes recorded the frequency. Repeat step measure with 10°C increased per stage until the highest temperature of +50°C reached.

Frequency Stability Under Voltage Variations:

Set chamber temperature to 20°C. Use a variable AC power supply / DC power source to power the EUT and set the voltage to rated voltage. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency.

Reduce the input voltage to specify extreme voltage variation ($\pm 15\%$) and endpoint, record the maximum frequency change.

8.5. Uncertainty

The measurement uncertainty is defined as ± 10 Hz

8.6. Test Result

Product	:	I600 WiMAX MODEM
Test Item	:	Frequency stability
Test Site	:	AC-4
Test Mode	:	Mode 1: Transmit (5MHz Bandwidth)

Frequency Stability Under Temperature - Channel High (2687MHz)				
Temperature (°C)	Frequency (Hz)	Limit (MHz)	Tolerance (ppm)	Result
-30	2,686,984,500	2496 ~ 2690	-5.77	Pass
-20	2,686,989,740	2496 ~ 2690	-3.82	Pass
-10	2,686,991,160	2496 ~ 2690	-3.29	Pass
0	2,686,996,160	2496 ~ 2690	-1.43	Pass
10	2,686,997,620	2496 ~ 2690	-0.89	Pass
20	2,686,998,850	2496 ~ 2690	-0.43	Pass
30	2,686,998,260	2496 ~ 2690	-0.65	Pass
40	2,686,995,960	2496 ~ 2690	-1.50	Pass
50	2,686,992,650	2496 ~ 2690	-2.74	Pass

Frequency Stability Under Voltage - Channel High (2687MHz)				
AC Voltage (V)	Frequency (Hz)	Limit (MHz)	Tolerance (ppm)	Result
138	2,686,996,120	2496 ~ 2690	-1.44	Pass
120	2,686,998,140	2496 ~ 2690	-0.69	Pass
102	2,686,997,850	2496 ~ 2690	-0.80	Pass

Product	:	I600 WiMAX MODEM
Test Item	:	Frequency stability
Test Site	:	AC-4
Test Mode	:	Mode 2: Transmit (10MHz Bandwidth)

Frequency Stability Under Temperature - Channel High (2685MHz)				
Temperature (°C)	Frequency (Hz)	Limit (MHz)	Tolerance (ppm)	Result
-30	2,684,986,020	2496 ~ 2690	-5.21	Pass
-20	2,684,987,830	2496 ~ 2690	-4.53	Pass
-10	2,684,991,150	2496 ~ 2690	-3.30	Pass
0	2,684,994,860	2496 ~ 2690	-1.91	Pass
10	2,684,997,840	2496 ~ 2690	-0.80	Pass
20	2,684,998,450	2496 ~ 2690	-0.58	Pass
30	2,684,997,560	2496 ~ 2690	-0.91	Pass
40	2,684,994,980	2496 ~ 2690	-1.87	Pass
50	2,684,992,650	2496 ~ 2690	-2.74	Pass

Frequency Stability Under Voltage - Channel High (2685MHz)				
AC Voltage (V)	Frequency (Hz)	Limit (MHz)	Tolerance (ppm)	Result
138	2,684,997,040	2496 ~ 2690	-1.10	Pass
120	2,684,998,120	2496 ~ 2690	-0.70	Pass
102	2,684,996,950	2496 ~ 2690	-1.14	Pass